1-1-1987

Spousal support and maternal responsivity to premature infants during the transition to parenthood.

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SPOUSAL SUPPORT AND MATERNAL RESPONSIVITY TO PREMATURE INFANTS DURING THE TRANSITION TO PARENTHOOD

A Dissertation Presented

By

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Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree

DOCTOR OF EDUCATION

May, 1987

School of Education

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ACKNOWLEDGEMENTS

In a process as long and involved as the doctoral one, there have been many people - my parents, friends and acquaintances, who through their support, made it possible for me to see it through to it's completion.

Let me begin by extending my appreciation to my chairperson, Carolyn Edwards, for her thoughtful guidance, assistance, and support at every stage of this work. I wish to thank my committee members, Roberta Collard, for teaching me so much about mothers and babies and especially, how to write about them and Warren Schumacher, for helping me to better understand the strengths of families under stress.

Special thanks to Mathias Chiakonda, statistician extrodinaire, who gave me both invaluable assistance with the analysis of my data as well as the thoughtful consideration of its meaning.

I would also like to thank the parents and infants who so willingly agreed to participate in this study.

My deepest appreciation is reserved, however, for my husband, Larry, who has taught me the real meaning of support.

Finally, this thesis is dedicated to Johanna Grace Jutres, born in the midst of this work, for taking me beyond the theoretical into the real and wonderful world of mothering.

ABSTRACT

SPOUSAL SUPPORT AND MATERNAL RESPONSIVITY TO PREMATURE INFANTS DURING THE TRANSITION TO PARENTHOOD

May, 1987

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The purposes of this study were: 1) to examine the experiences of families with babies born at term and prematurely following discharge from the hospital, 2) to investigate the ways that father support influences a mother's responsiveness toward her baby and 3) to determine in what ways preterm and fullterm infant characteristics influence their parents.

Subjects were 10 fullterm and 11 preterm infants and their mothers and fathers.

Information regarding support, the experience of having a new baby, parent impressions of their infant's temperament and development as well as their own sense of well-being was gathered via questionnaires and interviews with both parents at two, four and twelve weeks following the infant's discharge from the hospital.

Results indicate that for mothers of preterm babies, Father Support was associated with her own sense of well-being and with her perception of her infant as easy to care

for. For preterm babies, Father Support was associated with scores on the Denver Developmental. For both groups, Father Support was associated with mothers' responsiveness, measured by the HOME Inventory. Regarding temperament, babies' unpredictability was significantly associated with the HOME Inventory, Father Support and Father Help, for both groups. For preterm babies, an unpredictable rating was associated with higher scores on the Denver Developmental.

Parents' experiences upon bringing a new infant home were different for the two groups. Parents of preterm babies had a heightened concern for their babies welfare and their own ability to meet their infants' needs throughout the 12 weeks of the study. Fathers of preterm infants were found to take part in twice as many joint caregiving activities as fathers of fullterms once the babies were home. Family support was significantly associated with families of fullterm babies, but not families of preterms.

Results suggest that the experience of premature birth may serve to mobilize father involvement unlike that of fullterm birth, influencing the infant directly, through increased caregiving and indirectly, by his support to the infant's mother.

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INTRODUCTION

In the search for antecedents to the developmental outcome of normal children, researchers have traditionally assumed that the quality of the mother-infant relationship in some way sets the stage for the later social and intellectual development of the child. In its earliest formulation, the descriptions of these influences were usually unidirectional: from mother to child. The idea of "good mothering" has received a lion's share of attention and continues to be a pervasive theme in the literature today.

More recently, the focus has shifted to a bidirectional view of influence, recognizing the contributions of the infant (Lewis & Rosenblum 1974). This shift may be best illustrated by the theory of infant competence; that is, a competent infant is one who (in a normally expectable environment) is able to elicit appropriate care (Bowlby, 1969), while the caregiver manifests her sense of competence through the ease and success with which her actions obtain desired behaviors from her infant (Goldberg, 1977).

Development may thus be viewed as a process of ongoing interaction between the infant and his caregiver based upon a reciprocal system of rewards, fueled both from within the

infant to ensure survival and from within the caregiver to realize herself as a parent (Emde, 1980; Als, 1979).

Recently, many researchers most notably Bronfenbrenner (1979) have made a strong case for the influence of the social context of the mother and infant on the infant-mother interaction. This ecological view encompasses the influence of certain elements from within the mother's and infant's social world, extending the concept of competence beyond the dyad. Thus, we may now trace paths of influence upon infant development indirectly, through the caregiver's contact with her social world and directly, via the infant's immediate contact with the persons in its social context.

Periods of transition in the life span are recognized as critical times of stress. There is strong evidence suggesting that support derived from one's social network serves to buffer the effects of stress (Tolsdorff, 1976; Hirsch, 1980, Cobb, 1979). Specifically, the parent's social support system has a pervasive influence upon parental functioning and in responsive mothering (Crockenburg, 1983; Crnic, 1984; Belsky, 1984).

The transition to parenthood may be thought of as a developmental stage in the life span of the adult as the new experiences of parenthood contribute to the continued socialization of the parents as individuals (Rossi, 1968). Some consider new parenthood as a crisis (Waldroun & Routh, 1981; Rossi, 1968) while others consider it to be a

transition in the life cycle of adults but not necessarily a crisis (Russell, 1974; Belsky & Rovine, 1984). All researchers agree that the transition to parenthood does generate stress both for the wife as she undergoes physical and psychological changes and for the husband-wife dyad as they renegotiate their roles to include a third member.

Critical to the success of this transition is the perceived quality of the marital relationship (Grossman, Eichler & Winicoff, 1980; Russell, 1974; Herzog 1980; Galinsky, 1981; Osofsky, 1983; Wandersman, Wandersman & Kahn, 1980). That is, the wife's transition to motherhood is, in some ways, mediated by the extent of support she derives from her marital relationship. This support is thought to play a role in what Emde (1980) describes as the mother's "emotional availability" to mother.

The birth of a premature infant poses problems for both the infant and the caregiver. Early birth leads to difficulties for the immature organism as it struggles to overcome the physiological obstacles which threaten its survival. The premature infant is behaviorally different from its full-term counterpart and may be regarded as less competent in eliciting caregiving behaviors (Field, 1979; Goldberg, 1979). The caregiver of the premature infant carries most of the interactive burden, striving to make up for their underactive, less responsive infant-partner (Brown & Bakeman, 1980; Field, 1980).

For the caregiver, early birth signifies a premature transition to parenthood, failed expectations and the disruption of important biological and psychological processes (Kaplan & Mason, 1960; Blake, Stewart & Turcan, 1969; Goldberg, 1979; Johnson, 1983). Yet the majority of such mothers and infants do overcome these threats to mutual adjustment (Siegel, 1984; Siegel & Cunningham, 1984; Beckwith & Cohen 1984).

The Problem.

During the initial critical period of the premature infant, during which its life is assured through technological and medical care, the hospital becomes the infant's primary caregiver. When the infant is discharged from the hospital to the care of its parents, the role of primary caregiver is exchanged.

The purposes of the present study were 1) to examine this process of transition and adaptation as the parents assumed responsibility for the care of their premature infant at home and 2) to understand in what ways the infant, mother and father collectively contribute to the developmental outcome of the baby born prematurely. For comparison, families with infants born at term were also included.

By isolating a particular reproductive issue (prematurity) and time (transition from hospital to home) an

important event has been selected in which to observe the nature of the transaction between infant and environment.

The selection of this particular problem has been based upon the assumptions that:

1. The transition from hospital to home following the birth of a premature infant is a time of stress for the mother,
2. stress interferes with optimal parenting,
3. there are factors influencing the transition from hospital to home which can intensify or moderate feelings of stress,
4. the success of the transition may set the stage for the subsequent quality of caregiver-infant interactions,
5. the emotional, social and cognitive developmental outcomes for the infant are in some way related to the responsivity of the caregiving environment.

Hypotheses

The following hypotheses were tested:

1. The transition from hospital to home for premature and fullterm infants and their caregivers is characterized by developmental stages (Kaplan & Mason, 1960; Blake, Stewart & Turcan, 1969).
2. A mother's responsivity to her infant is a function of both the infant's ongoing development

and her perceived spousal support (Belsky & Kovine, 1984; Herzog, 1980; Blake et al. 1975).

As technological advances continue to guarantee the survival of many low birth-weight infants, so does the challenge to provide for the needs of the families involved.

By selecting an ecological framework which includes influences beyond the mother-infant dyad, certain family dynamics surrounding the birth of a premature infant may be revealed which may show the importance of including the father in intervention efforts.

C H A P T E R II

REVIEW OF THE LITERATURE

The following review of the literature suggests that:

1. premature infants are behaviorally different from their full-term counterparts;
2. the normal transition to parenthood is a stressful event in the lives of parents and premature birth increases this stress;
3. fathers play a critical role in their child's development;
4. that there exists a dynamic interplay between infant, maternal and paternal behaviors which serve to mediate the effects of reproductive risk.

Contributions of the Infant

The Competent Infant.

Much of the recent research on infant has been devoted to the demonstration of infant capabilities. Perhaps it was Lewis and Rosenblum's (1974) classic, The Effects of the Infant on the Caregiver, which created a new regard for the infant as a contributor and active participant in its development, and as an individual whose behaviors influenced its caregiver's actions towards him. This notion was

introduced earlier by Bowlby (1969), who claimed that the normal infant is genetically prepared to emit proximity and contact-maintaining behaviors which evoke adult caregiving activities, which ensure its survival.

The identification of these contact-maintaining behaviors is typically derived through the analysis of interaction between infant and caregiver. It is through these analyses that we observe a "competent" infant, one who is able to elicit the "appropriate care from the environment" (Bowlby, 1969, p.167).

Initially, the infant's agenda is to maintain physiologic, motoric and state control in an ever smoother fashion (Als 1979). He is able to achieve these goals by calling forth help from his caregivers. At first, he cries, fusses, calms or brightens; later, he smiles, coos and interacts reciprocally. These behaviors serve to signal an ever-broadening repertoire of messages to the caregiver to provide for emotional and physical survival (Schaffer 1977, Wolff 1966). His sensory system (visual, tactile, kinesthetic, auditory) has enough maturity to enable him to process information and to allow him to gain a sense of competency to the extent that his signalling behaviors obtain desired results.

We may appreciate the organization of infant behavior in relation to his physiology. Initially, an infant's physiological agenda involves regulation of body

temperature, sleep cycles and control over state. Then as the infant gains continued control of his physiology, he is able to maintain ever lengthening periods of alertness, enabling him to be "available" to process information from the environment (Als, 1979). It is the infant's state: the amount of sleepfulness, wakefulness, irritability and soothability which have profound effects upon the caregiver. It is along such dimensions of physiology and state that we may distinguish infants with biological or reproductive casualty.

The Premature Infant.

The infant's health status has been shown to have powerful effects upon how he is perceived by the caregiver. The birth of an unhealthy, premature or otherwise impaired infant violates parental expectations for a healthy infant.

The premature infant differs on a number of behavioral dimensions. For example, the premature is less organized, less alert, more irritable, underaroused and labile of states (Als, Lester & Brazelton, 1979).

During the last months of gestation, the physiology of the infant continues to mature. Premature birth thrusts the infant into an environment which is not designed to meet its physiological needs. Medical technology now creates an artificial intrauterine environment to support its

survival. The goal for the premature, like that of the fullterm infant, is to coordinate its various subsystems along with input from the environment (Als, et al. 1979). The concept of cost becomes important in understanding the organizational behavior of either the fullterm or pre-term infant. For the premature infant, input may tax the immature organism, resulting in a disruption of subsystems such as lack of motor control, rapid color change and wide state fluctuation. For the fullterm, there is presumably less cost to such subsystems due to a stronger physiology.

Als et al. (1979) see the behavior of the premature infants as forming a continuum: one end characterized by hyper-reactive, hyper-sensitive behavior, the other by hypo-reactive, underaroused behavior. Both extremes spell difficulty for the infant in getting new information from the environment. For the caregiver, the difficulty lies in deriving a sense of her own competence as a mother as she attempts to meet her infant's needs (Goldberg 1979). Thus, it appears that mothers of underactive, less responsive infants adopt a mode of interaction which seeks to compensate for these qualities (Goldberg, 1979; Field, 1980). For example, mothers of premature infants appear to be more active, persistent and to engage in more tactile and vestibular stimulation while interacting with their infants than do mothers of fullterm infants. In their analysis of interaction, Brown and Bakeman (1980) found that mothers of

preterm infants initiated more and acted alone a greater percentage of the time in comparison to mothers of fullterm infants. By three months, the preterm mother-infant pairs had established a less varied, more sterotypic repertoire of exchange.

Field's (1980) findings also provide evidence to support this view. According to Field, mother and infant responsivity may best be described as an inverted U function. Thus, at either end, high or low activity and/or vocalizing by the mother elicits low gazing behavior by the infant while moderate maternal activity appears to evoke the greatest amount of infant gaze. Moreover, Field found a match of underactive infant and hyperactive mother. A picture emerges of a mother compensating for her less responsive partner in order to maintain the communicative act intact.

To summarize, the behavioral repertoire of the premature infant is characterized by a lowered, more sensitive threshold for stimulation. This sensitivity may interfere with physiologic, motoric and state regulation.

Behavioral Differences of Prematures and Childhood Outcome.

What these differences in early interactional patterns of preterm mother-infant pairs mean for later developmental outcome is inconclusive.

Results of some longitudinal studies suggest that differences tend to disappear over time (Goldberg, 1979), while others suggest that differences emerge on developmental tasks in the form of delays at nine months (Beckwith & Cohen, 1979), at two years (Beckwith, Cohen, Kopp, Parmelee & Marcy, 1976) and in middle childhood (Sigman & Parmelee, 1979; Caputo, Goldstein & Taub, 1979; Bakeman & Brown, 1980). Sigman and Parmelee found only minor differences in Bayley scores at two years between preterm and fullterm infants favoring the fullterm group. However, when a one month caregiver-infant interaction measure was entered into the analysis, a statistical difference emerged. This difference separated the infants into high and low-risk groups (as opposed to pre and fullterm) predicting a more favorable outcome at two years for the low-risk group.

Similarly, in a longitudinal study of preterm and fullterm infants, Siegel and Cunningham (1984) were interested in the possible impact of each group upon the responsivity of the caretakers. These authors found that while there were no differences between fullterm and preterm infants per se, differences did emerge between infants judged to be delayed versus non-delayed.

Further evidence can be found which reveals the nature of transaction between infants and caregivers in the work of Siegel and Cunningham (1984). In a longitudinal study of low

birthweight infants (under 1500g.) and fullterm infants, the authors were interested in identifying differences in the level of stimulation and responsivity of the environment (parents) between the two groups. The authors hypothesized that the parents in the two groups would respond differently to infant's who were behaviorally different. For example, does the behavior of the more competent fullterm infant increase his parents' responsivity towards him? The Home Observation for Measurement of the Environment (HOME) was administered at one, three and five years of age as a measure of environmental responsivity. Psychometric tests of cognitive and intellectual ability were administered at the same intervals. Results revealed no differences between the pre and fullterm infants at any age. However, when examining protocols for children with regard to developmental delays versus nondelays, differences emerged which increased as the child grew older. The authors suggest that the developmentally delayed child may "fail to provide appropriate cues for parent behavior, the parent responds with inadequate stimulation, the child becomes more delayed due to nonoptimal environment, and it becomes even harder for the parents to provide the appropriate environment." (p.88).

Like Belsky, et al. (1984) Siegel and Cunningham acknowledge the powerful impact an infant or child's behavior has upon the parent. They recognize a mutual

influence based upon clarity of signalling behaviors, and they illustrate an ever-spiralling transaction between the organism and the environment which may not bode favorably for the development of the child with initial lags in development.

Infant Temperament.

However, some researchers put the onus of adaptive responsibility on the parents (Thomas, Chess & Birch, 1968; Sameroff & Chandler, 1975). They believe that the less severe early delays seen in most prematures and the behavioral differences in these children can be overcome by parents who are sensitive enough to learn to understand their children's cues regardless of quality, and who modify their interactions and thus optimize the developmental outcome for their children. Studies suggest that the adequacy of the mother's social support system is a factor in this process (Crockenburg, 1981; Crnic et al. 1983).

There exists among researchers a debate regarding the qualities of infant personality referred to as temperament. These qualities are typically framed in terms of negative attributes i.e. irritability. The question concerns whether temperament represents true characteristics of the infant, are purely parent perceptions, or is a result of the ongoing interation between the infant and its environment. On the one hand, research generated through the use of the Neonatal

Behavioral Assessment Scale (NBAS, Brazelton, 1973) reveals infant differences along behavioral dimensions present in the first days of life. Studies demonstate that the given behavioral organization as revealed by the NBAS is associated with differences in birth status and affect subsequent mother-infant interaction (Field, 1980). These are thought by some to be predictive of later behavioral disorders (Thomas, Chess & Birch, 1968) or associated with maternal responsiveness (Fish & Crockenburg, 1981). In the latter study, babies rated high on an irritability cluster of the NBAS were found to be more alert at nine months, a variable associated with increased maternal rsponsiveness. Furthermore, irritable infants with very responsive mothers smiled more and were rated more sociable at six and nine months.

Bates (1979) and Crockenburg (1986) argue that temperament is not so much a measure of the individual's characteristics but a measure of the parents' perception of their infant. Furthermore, as Crockenburg points out, unless temperamental qualities are assessed in the first few days of life, it is impossible to rule out the effects the environment has had in shaping temperament. Nevertheless, the literature is replete with examples of the interactive effects of infant temperament upon both maternal and paternal responsivity. For example, ratings of high negative qualities have been found to relate to decreased

maternal behaviors such as involvement and responsiveness (Peters-Martin & Wachs, 1984) while others have found that such negative temperament such as irritability may actually precipitate increased maternal involvement (Fish & Crockenburg, 1981; Crockenburg & Smith, 1982). It appears that time is a factor however, with maternal responsiveness decreasing as the infant gets older.

Finally, it has been suggested that the interaction between infant temperament and maternal responsivity must be considered contextually. That is, that maternal variables such as personality, child-rearing beliefs, socio-economic status, and social support operate in various ways to shape maternal responsiveness to infant characteristics considered difficult (Belsky, 1984; Bates, 1979; Crockenburg, 1986).

In the end, these questions illustrate the need for the careful consideration of methodology when attempting to understand the nature of infant temperament and its effects on the caregiving environment.

Contributions of the Mother.

Research findings suggest that the quality of early interaction between mother and infant is related to subsequent developmental outcomes for the child. This view is based upon the theory that mother-infant interaction, in various contexts, is a mechanism for building expectations

and knowledge of self and other (Lewis & Lee-Painter, 1974). Because the mother is regarded as the primary person in the infant's life, development has usually been interpreted in terms of the mother and infant exclusively. Evidence supporting a wider view of influences upon development are presented later in this review.

The focus upon infant outcome with respect to the caregiving environment has been researched with respect to maternal behaviors at both macro and micro levels of analysis.

The micro-analysis of mother-infant interchange reveals a regulation of joint activity which is coordinated in time and predicated upon the ability of each member to predict behavior in the other (Goldberg, 1977; Tronick, 1980). This interaction has been likened to a dance, with each member bringing his or her own rhythm and steps, exchanging the lead and modifying old steps into new ones (Schaffer, 1977). The partners take cues from one another based upon facial expressions, gaze behaviors, vocal signals and body movements. Exchanges are characterized as rhythmic and cyclical, with their roots in the early burst-pause patterns of infant sucking behavior (Wolff, 1966).

Maternal responsiveness has also been examined with respect to measures of behavior as they occur in a broader context. In this way, maternal responsiveness comes to respresent the environment. In such studies, infant outcome

is typically measured on standardized tests of cognitive functioning and correlated with measures of the mother's social and verbal responsiveness, sensitivity to infant behaviors, her organization of the environment and, in general, the quality of stimulation she provides (Clarke-Stewart, 1975; Yarrow, Pedersen & Rubenstein, 1975; Ainsworth, 1969; Lewis and Lee-Painter, 1974; Elardo, Bradley & Caldwell, 1975).

There are many challenges to the achievement of synchronous mother-infant interaction based upon both the behavioral organization of the infant and the ability of the mother to regulate her own behavior in response to her infant's cues. It is not only infant characteristics such as birth status, sex, and behavioral organization but a constellation of maternal variables as well. Using Emde's (1980) idea of "availablity" it is possible to conceptualize the many factors operating within the mother herself which shape her interactions with her infant. For example, the age and educational level of the mother have long been known to be associated with levels of responsiveness to her infant. Studies of adolescent mothers, for example, show them to be less responsive and more punitive and to engage in less verbal interaction with their infants (Field, 1980b). However, when maternal age is considered within a contextual framework, it is possible to identify other factors influencing maternal responsiveness.

In their study of adolescent mothers in Puerto Rico, Coll, Sepkowski & Lester (1982) found that in a culture where becoming a mother at an early age is the norm combined with the presence of extended families, the mothers and infants did not exhibit interactional difficulties noted by researchers in this country. Wise & Grossman (1982) in their study of inner-city adolescent mothers identified mother's ego-strength as the important variable associated with a young mother's successful adaptation to her infant. It is precisely this variable of maternal psychological health which Sameroff & Chandler (1975) identify as critical in predicting outcome for infants born at risk. In a study of maternal self-esteem in the postpartum period, Shea (1984) identified variables of infant behavior and health and family support operating to influence the mother's self-esteem. Furthermore, for mothers of high-risk infants, there were additional factors operating to influence maternal self-esteem. These included additional infant variables, parity, and the mother's own health. Maternal self-esteem was defined as the positive feelings the mother had regarding her ability to provide care for her infant.

Contributions of the Father

In order to appreciate the relatively recent attention given to fathers regarding their contribution to the

development of their children, it is worthwhile to consider the socio-cultural context in which this has taken place. Pederson (1981) suggests that changes in the family have precipitated an increase father involvement with his children. These changes include a greater isolation of the nuclear family from extended family members coupled with the mother's return to work within weeks or months following the infant's birth. Thus, a reorganization of roles occcurs, causing the father to increase his caregiving activities in order to compensate for a working mother and a family which does not live close by.

Direct Effects of Father Involvement

Fathers' contributions to their children's development are best conceptualized as direct effects and indirect effects. Through his direct contact as caregiver, the father provides the infant with a contrasting repertoire of behaviors, thereby broadening the infant's social world (Cochran & Brassard, 1979; Lamb, 1981; Lewis & Feiring, 1978), while his support of the mother influences her response to the infant. Findings regarding the quality of father-infant interaction are generally reported in contrast to mother-infant interactional styles. For example, some researchers found fathers to engage in more physical and robust activities with their infants (Lamb, 1977; Clarke-Stewart, 1978;). Meanwhile, Parke and Tinsley (1980) make a

strong case for fathers as as nurturant, equally responsive to infant cues and competent in caregiving behaviors. The authors suggest that it is the division of labor, (i.e. mothers doing more of the caregiving, particularly in the early months of the infant's life) that creates a scenario in which fathers appear to be more of a playmate than a caregiver. While interactional differences between mothers and fathers do exist, it appears that the research design should include opportunities for the father to engage in caregiving activities and conclusions drawn with respect to division of labor among couples.

The effects of infant behavior upon the father are also documented. At birth, it appears that Caesarian delivery increases father participation in caregiving activities (Pedersen, 1981). While this is most likely related to the mothers' recovery from surgery, effects persisted throughout the infants' first year of life and then dissappeared by the infants' first birthdays.

Similarly, Yogman (1983) reported that fathers of preterm infants were more involved in caregiving activities, albeit less than mothers, at 1, 5, and 18 months postterm. Both a Caesarian delivery and the early birth of the infant may be viewed as circumstances which alter the expected course of events and precipitate increased father involvement.

The organizational behavior of the preterm infant has been demonstrated to show effects on fathers' style of interaction. Yogman's (1983) study of father in face-to-face interaction with their five month old preterm infants revealed a diminished level of intensity and play behaviors, as if responding to the possibility that higher levels might over stimulate and stress their infant.

Other effects of infant characteristics upon father involvement were reported by Nugent (1986). In his study of Irish fathers, Nugent reports that negative temperamental qualities, such as unpredictability, as measured on the Infant Characteristic Questionnaire (Bates, 1979) actually precipitated increased father involvement.

Indirect Effects of Father Involvement

Indirect effects of father involvement on the infant's development are those mediated through his interaction with the mother. Most often, this is reported in terms of support. Support has been associated in a number of studies with a variety of infant variables such as temperament and attachment (Crockenberg, 1981), prematurity (Crnic et al., 1983) and maternal variables such as responsiveness towards her infant (Feiring, 1976) and self-esteem (Shea, 1984). However, an alternative explanation may be offered in the case of Feiring's (1976) findings. She reports that maternal involvement and responsiveness towards her infant

is related to maternal perception of spousal support. Furthermore, negative temperamant qualities of the infant were related to increased spousal support. Studies of the impact of temperament on mothers' responsiveness (Crockenburg, 1981) demonstrate that these negative attributes actually serve to increase involvement on the part of the mother. This supports Nugent's findings for fathers reported previously. Thus, the difficult infant may be precipitating increased involvement for both parents, and this could be interpreted by the mother as support from her spouse.

While all the studies identify the positive effects of support, the measure of support itself tends to be global. That is, a combination of father and other support. For example, Crockenberg states that a supportive person (family, spouse, friend) may serve to supplant a nonresponsive mother, boding more favorably for the infant.

Parke, Power and Gottman (1979, p.240) summarize the indirect effects as follows:

> "...there exists a sizeable number of ways in which fathers can have indirect influences on their infant's development in a transitive way through the mother. These influences operate through information exchanged with the mother, the father's occupation, his physical support of the mother, his disagreements with her concerning a number of infant and non-infant related topics, his perception of the mother and through the nature of the husband-wife relationship in general."

The Transition to Parenthood

As mentioned, some researchers perceive parenthood as a life crisis to be negotiated by both parents, particularly the mother, as she attempts to reconcile her new role with previous roles (Rossi, 1968; Lamb, 1978). Others approach the study of parenthood as a developmental phase in the life-span, viewing parenthood as a life transition, in which the parents must adjust as individuals and together as a couple (Rossi, 1968; Osofsky, 1983).

Galinsky (1981) identifies six stages of parenthood through the life-span, the first two of which are pertinent to this review. The first stage, image-making, involves the elements of acceptance and preparation for the impending birth. This stage is essentially characterized by idealized images, both of the unborn infant and of the self as parent. This idealistic, image-making stage is not without elements of reality however, as the couple negotiate changes in their relationship with each other and members of their social network.

It is only after the actual birth of the infant that the parents begin to "separate their fantasies and projections from realities" (p.64). This step in the transition to parenthood is a process of adaptation, again, for each parent to the infant and for the parents as a couple.

Wandersman, Wandersman and Kahn (1980) identify the following four basic changes that characterize the transition to parenthood:

1. the feeling of responsibility for the health and welfare of the infant,
2. a reorganizing of the family system from dyad to triad,
3. a reorganizing of the dyad's social network,
4. rising demands on financial resources.

These researchers were interested in discovering the relationship between the adjustment to parenthood and the development of the infant, such as the effects of spousal interaction on parenting.

Parent-Infant Interactions

Belsky (1979), using naturalistic home observations, recorded the interactional patterns of 40 middle-class families for two hours on two different days. These behaviors were recorded, evaluated and analyzed for patterns based upon five maternal, six paternal and four joint parental factors which were then intercorrelated with behavioral ratings of spousal interactions. Belsky found two basic patterns: 1) that wives exert more influence upon husbands' parenting behavior than vice versa and 2) that there may be a relationship between parental involvement with their infant and their spousal relationship. For

example, couples whose conversation was most often non-related to their infant subsequently were rated low on measures of positive parent-infant interaction.

In their longitudinal study of 72 families participating in the Pennsylvania Infant and Family Development Project, Belsky, Gelstrap and Rovine (1984) sought to identify stability and change in triadic interaction at one, three and nine months postpartum. Five maternal, five paternal and four infant behaviors were recorded through interviews, questionnaires and direct observation. Dyadic and triadic interactions were scored and intercorrelated to determine the nature of their relationship. Results supported the authors' hypothesis that as infant behavior changed, parental behaviors changed correspondingly. For example, as infants tended to need care less often and became more social and oriented to the environment, the parents tended to decrease overall caregiving and affectional behavior while increasing their stimulation and responsivity. These changes in parenting behaviors were similar for both mother and father. Yet while behavioral changes over time were similar for both parents, individualistic styles between mothers and fathers were maintained. The infants did not receive the same care from each parent. As the infant matured, so did the level of parental independence. Maternal involvement at one month surpassed that of the father's involvement; however, as the

child matured, paternal involvement increased. Belsky et al. propose that as the infant grows older, "one partner's time spent with the baby is likely to be used by the other as an opportunity to be relieved from the burdens of caregiving" (p.701).

LaRossa and LaRossa (1981) who interviewed 20 couples, explain differences in the involvement of mothers and fathers with the infant in terms of the parents' competition for free time which is made scarce by the infant's dependency. They conclude that the reasons fathers play more with their infants while mothers engage in more caretaking activities may be explained as the father's reluctance to give up his free time. Play is apparently regarded by fathers as less demanding and less likely to interfere with their free time. However, in a study of fathers who were the primary caretakers of their infants, Field (1978) found fathers engaged in more play behavior. Field's findings support those of Belsky, et al. (1984): that different parenting styles exist regardless of who assumes primary caretaker responsibilities.

Effect of the Marital Relationship on Parent-Infant Interaction

Further evidence demonstrating the relationship between the quality of the marital relationship, infant development and adjustment to parenthood can be found in the

longitudinal study by Grossman, Eichler and Winnicoff (1980). These authors were interested in identifying factors in the parents that would be predictive of coping and adaptation during labor and delivery and the initial postpartum period and after one year postpartum. Subjects were primiparous or multiparous middle and upper middle-class couples. Measures made on the parents included feminine and masculine identification, anxiety, depression and adaptation. Infant variables included Apgar scores, the Neonatal Behavioral Assessment Scale clustered for temperament and (at one year) the Bayley Motor Development Index and the Psychomotor Development Index. Results pertinent to the present study indicate that the most significant predictor of parental adjustment to any single factor in the study was the quality of the marital relationship. Those women reporting satisfaction with their marriages were less depressed and better adjusted at all points throughout the study. Conversely, wives with husbands judged to be more anxious and less psychologically healthy did not fare as well on all measures. Interestingly, infant irritability was related to maternal anxiety and depression only in the immediate postpartum period. How well the infant was functioning at one year was best predicted by characteristics of the mother regarding her overall adjustment and contentment in her marriage. Moreover, it appears that the extent of the father's involvement was

positively related to the infant's cognitive and motor development at one year. In view of Belsky's findings, one might speculate that as the infant became older and paternal involvement increased, issues surrounding the irritability of the infant become shared by both parents or at the very least, are less of a solitary burden for the mother to bear. One might also speculate that an irritable infant may propel a mother to seek additional support from her spouse and might also make her more anxious during the postpartum period. Additionally, infant irritability may actually be a characterstic which serves to mobilize paternal involvement (Nugent, 1986).

Proponents of an ecological view of development suggest that influences beyond the mother-infant dyad operate at two levels: direct and indirect (Lewis & Feiring, 1978; Bronfenbrenner, 1979; Cochran & Brassard, 1979; Parke, Power & Gottman; 1979). In the transition to parenthood there is an indirect effect, by which the husband through his interactions with his wife, influences the outcome for his infant (Parke et al., 1979,; Lewis & Feiring, 1978). The studies reviewed on the transition to parenthood demonstrate this transitive influence, identifying the vital role of spousal support in the successful adaptation to parenthood, which in turn, appears to be related to developmental outcome for the child.

The Transition to Parenthood for Parents of Prematures.

The premature birth of an infant adds a new dimension to the transition to parenthood. Goldberg (1979) writes that "parenthood is unexpectedly thrust upon individuals who may not be fully prepared for it" (p.217). She suggests that premature birth disrupts basic biological and psychological processes, based on hormonal changes, which have yet to occur in the developmental course of the pregnancy.

In terms of Galinsky's stages of parenthood and the special problem of premature birth, the parents are prematurely forced into the reality stage which can lead to multiple crises (Johnson 1983; Kaplan & Mason, 1960). The most immediate crisis takes place in the first twenty-four hours, when infant survival is of utmost concern. At the same time, the parents must contend with an intensive care environment for the infant for which they are unprepared.

Psychologically, the parents run the emotional gamut of guilt, fear, blame and grief upon the birth of a less than perfect child (Blake, et al. 1973; Johnson, 1983; Kaplan & Mason 1960). The idealism of Galinsky's stage one is cut short by an early entry into the reality of stage two, in which the parents' fear of having the less than perfect child is confirmed.

Central to the discussion of the premature transition to parenthood is the issue of the separation of the mother

from her infant. Leiderman and Seashore (1969) suggested that separation in the initial postpartum period may contribute to the mother's feelings of incompetency. The authors' studied these effects by contrasting maternal attitudes and behaviors in a total of 66 couples: two groups with preterm infants, one given the opportunity for contact with their babies, the other separated according to hospital practices and a group of mothers of fullterm infants discharged after a routine three-day postpartum stay. While differences in maternal attitude and self-competency disappeared by one year, there were important differences in maternal behaviors such as amount of touching and smiling at the infant, which persisted through the first year. For example, mothers of fullterm infants and the prematures in the contact group touched and smiled at their infants more than did mothers who had been separated from their preterm infants. Primiparous mothers made more contact behaviors than did multiparous mothers, with male infants evoking these behaviors more than female infants. If one believes that early maternal behaviors play a role in the development of the infant, it appears from this study that separation may interfere with the development of maternal behaviors which promote growth in the infant. Perhaps the most interesting and unexpected finding was the possible effect of prematurity on the divorce rate of the parents separated from their infants.

Five out of the seven couples who were divorced two years after the birth of their infant were in the separated group, two in the contact group and none in the fullterm group. Examination of these data lead the authors' to conclude that neonatal separation is a "critical variable...providing stress which creates disequilibrium in the nuclear family structure" (p.229). However, the authors do not provide us with enough information about these seven couples, their relationships, other life events, or the health status of their infants beyond gestational age to allow us to make the same inference.

Herzog (1980) was interested in identifying those aspects of maternal and paternal functioning which lead to adaptation in spite of separation due to infant hospitalization for prematurity. Eighty percent of the two hundred couples studied were able to cope successfully and adjust to the separation. Adaptation was judged in terms of parental attachment, although the specific definition of attachment is not clear. For the remaining twenty percent judged to have difficulty in attachment to their infant the following three critical factors emerged:

1. the husband was judged to be apathetic, failing to nurture his wife,
2. the mother was judged to have a "disturbance of affect,"

3. a disorder on the triadic level emerged by the child's first birthday.

Herzog discovered two maladaptive patterns:

1. the father's withdrawal from the mother and the infant, and
2. the father's entering into competition with his wife regarding the care of their infant.

Herzog concludes that, in the final analysis, it is the father who plays a critical role in the transition to premature parenthood, through nurturing the mother/wife so that she may, in turn, nurture their infant.

In a study of 163 infants born from 1966-1973, weighing less than 1500g, Blake,et al. again identified the father's support as the critical factor in the mother's ability to adapt to the crisis of premature birth. The authors were able to identify three phases of adaptation during the period following the infant's discharge from the hospital:

1. a honeymoon phase, lasting from seven to twenty-one days, a period of elation related to finally bringing the infant home,
2. a phase of exhaustion, lasting from a few days to a few weeks, characterized by the mother's frequent complaints about her infant's difficulties and her own tiredness,
3. a phase when the infant becomes socially

responsive, (smiling), thus reinforcing the mother.

Blake and her colleagues concentrate primarily on the mutual influence of the mother and infant. It is the mother's feelings of elation or exhaustion or the infant's emerging smile which characterize these phases. The identification of emerging positive infant social behavior and corresponding parental changes supports Belsky's (1984) conclusion that as infant behavior changes, parent behavior changes corrspondingly.

Blake, et al. describe paternal involvement as "sympathetic and supporting" (p.276) for those mothers who adjusted best. They describe further evidence of paternal involvement in terms of the frequency of his visits to the hospital and his expression of anxieties and number of questions asked about the infant's progress.

The authors suggest that this atypical birth "may actually be advantageous to the formation of paternal relationships" (p.276), as the hospitalization period allows for added time for adjustment to new family dynamics. It is obvious that the authors have identified variables of triadic functioning at triadic levels but do not report any quantitative findings regarding the father's role in this adaptive process.

Kaplan and Mason (1960) identified four phases in maternal coping with the stress of premature birth:

1. anticipatory grief, a basic concern for the survival of her infant;
2. acknowledgement of failure, a realization and coming to terms that she has failed to produce a fullterm infant;
3. a resumption in her relationship with her infant, once broken by the early birth itself, rekindled as the infant continued to make gains;
4. knowledge seeking, the desire to understand the behavior and care of her infant.

Kaplan and Mason specify a "good outcome" for the mother and infant if the mother negotiates these stages, sees her infant as essentially normal, provides the infant with realistic care and takes pride and satisfaction in the care she provides.

These "psychological tasks" (p.543) correspond roughly to Wandersman's, et al. (1980) first of four stages in the transition to parenthood, the responsibility for the health and welfare of the child. One may speculate that the birth of a premature infant may heighten the significance of health and welfare factor.

Kaplan and Mason's work on the psychological aspects of premature birth constitutes a significant contribution to our understanding of adaptation in the atypical circumstance of premature birth at the dyadic level. As early as 1960, they identified the influence of the state of the infant

upon the well-being of the mother. The observation by the mother of healthy gains in her infant may serve to signal to her that she no longer need be concerned about becoming involved with an infant who might not survive. Finally, the authors mention "the behavior of the father as a current situational force has an important bearing on outcome" (p.539) but focus their investigation primarily upon the mother.

Summary

In her review of the literature on separation and the high-risk infant, Penticuff (1980) urges the adoption of a comprehensive approach to research, one which weighs the amount of stress compared to the amount of social support the parents have with the behavioral organization of the infant.

The literature reviewed suggests that:

1. premature infants are behaviorally different from their full-term counterparts, but prematurity per se may not predict developmental outcome,
2. the transition to parenthood is a stressful event in the lives of parents, and premature birth increases this stress,

3. spousal support buffers the effects of this stress and increases maternal adaptation to the early birth of her infant,
4. there exists a dynamic interplay between infant, maternal and paternal behaviors which may positively influence outcome for infants born prematurely.

Findings suggest that the ability of the mother to be responsive is directly related to the behavior of her infant and to the nature of spousal support. Yet the literature reviewed here also identifies many additional factors contributing to the mother's ability to provide care for her infant. Thus, in addition to infant characteristics, there exists a constellation of factors which the mother brings to her relationship with her infant: those which are part of her history as an individual, her psychological health, and the context of her social world.

Attention to fathers as contributors to their children's development has been relatively recent. It appears that fathers influence their children directly via interactions with them and indirectly through their interactions with the mother, most often measured as support. Of particular interest is the possibility that fathers may substitute for a less responsive mother, thereby buffering effects of decreased maternal involvement.

Results from studies reviewed here make it imperative to include the father in research designed to uncover factors contributing to the child's development. Furthermore, fathering behaviors can only be understood in light of the complexity of the family system.

Finally, the transition to parenthood for families with either fullterm or preterm infants provides a unique focus from which to observe the transaction between infant and environment at a broader ecological level which includes the father/husband.

Research regarding the transition to parenthood has not focused upon the similarities of experiences among the two groups. That is, research on the transition, having its underpinings in sociological study, focuses on the experience without regard for the birth status of the infant. On the other hand, research on the transition to parenthood for parents of premature infants typically focuses on the mother's adaptation to her infant without systematic study of triadic functioning. In Yogman's (1983) study of fathers of preterm infants, adaptation to this atypical parenthood included increased father participation in caregiving activities.

Once again, the research findings point to the need to make multiple assessments of a variety of factors, over time, in order to adequately understand the dynamics of maternal responsiveness to her infant and what it means for the infant's development.

C H A P T E R III

METHOD

Procedure

Mothers and fathers of fullterm infants were recruited directly in the hospital where the birth took place by the principal investigator. These families were recruited using information provided by both the nursing staff and hospital records. A follow-up telephone call was made to confirm participation and set a date for the first visit.

Mothers and fathers of premature infants were left brief notes on their infants isolettes informing them that they would receive a call asking them to participate in the study. Just prior to discharge, parents were telephoned by the principal investigator to recruit them as participants and arrange the first visit.

In both procedures, parents were informed of the procedure and told, in general, that we were interested in the experiences of new parents. Written permission was obtained during the first home visit.

All data were collected by the principal investigator. The schedule for the collection of data was based upon the number of weeks postdischarge in order that all parents had comparable time at home with their infants.

Schedule of Interviews

Time 1, two weeks post discharge. At this time, both parents were interviewed at home. In addition, they were asked to complete the Locus of Control Scale and the Infant Characteristic Questionnaire. Mothers also completed the Neonatal Perception Inventory. One parent was interviewed while the other parent completed questionnaires in a separate room. This saved time and insured individual responses for both the interview and written questionnaires.

Time 2, four weeks post discharge. Data at this time were collected via telephone, with mothers only. At this time, mothers were asked to respond to the Typical Day Survey and several interview questions concerning support, their infant's growth and development, adaptation to new parenthood and satisfaction with life.

Time 3, twelve weeks post discharge. Approximately three weeks prior to the final contact parents were telephoned to confirm the date and time of the final visit. At this time, mothers were reminded to expect a packet of questionnaires in the mail to be completed and ready for collection at the final visit. Mailed questionnaires included a Father Survey (fathers only), the Locus of Control Scale and Infant Characteristic Questionnaire (both parents), the Neonatal Perception Inventory and Maternal Attitude Survey (mothers only).

Mothers and infants were required to be present for the final visit. At this time, the HOME Inventory and Denver Developmental were administered. Additionally, a short follow-up interview, including collection of demographic data was completed.

Subjects.

Ten fullterm and 11 preterm infants, their mothers and fathers were recruited at the Baystate Medical Center, Springfield, Massachusetts between October 1985 and February 1986. Selection variables included gestational age, parity, type of delivery and presence of both mother and father in the home. Fullterm infants were required to have a minimum gestational age of thirty-eight weeks and to be discharged with their mothers. Preterm infants were required to have a maximum gestational age of thirty-seven weeks and a hospital stay of ten days or more. Only fullterm infants considered healthy were included. However, minor complications such as elevated bilirubin and infection were allowed as long as the infant was discharged from the hospital with his mother. Only preterm infants with complications considered typical of premature birth were allowed (i.e. elevated bilirubin, infection, mild respiratory and feeding problems).

The final sample included ten fullterm infants ranging from 38 to 41 weeks gestational age and eleven preterm

infants ranging from 26 to 36 weeks gestational age. Gestational age was determined from medical records and maternal report. The fullterm group consisted of five male and five female infants while the preterm group had four male and seven female infants. Fullterm infants remained in the hospital from one to five days while preterm infants were hospitalized from ten to one hundred nineteen days. Fullterm infants were recruited by the principal investigator directly in the hospital, one to two days following their birth. Preterm infants were recruited via letter and follow-up telephone call, approximately two weeks prior to discharge, by the principal investigator.

All parents were married and living in the same household with the exception of one preterm father whose out-of-state employment caused him to live at home on weekends only.

The two groups were matched for parity. Type of delivery included three vaginal and eight Caesarian section for the preterm group and six vaginal and four Caesarian section for the fullterm group.

Demographic data were collected during the course of the study and are presented in Chapter IV.

Assessment Methods

Infants.

All infants were examined using the Denver Developmental Screening Test (Frankenburg & Dodds, 1973) at 12 weeks postdischarge.

The Denver Developmental is comprised of 105 items, covering a range of accomplishments by children birth through six years of age. The actual number of items used for the sample in this study was approximately eighteen. Items are arranged in four subscales: personal-social, fine motor/adaptive, language and gross motor. Items are scored pass or fail. The Denver Developmental yields a composite score across the four subscales based upon the number of delays found in each subscale. This, in turn, is reflected in one of three possible ratings: normal, questionable or abnormal. Preterm infants were assessed based upon corrected age (40 weeks minus gestational age, subtracted from chronological age) according to test protocol.

The Denver Developmental was standardized on over one thousand children ranging in age from two weeks to six years. Test-retest reliability on a sample of twenty children within a one week time period yielded a 95.8% rate of agreement. (See Appendix A.)

Assessment of Maternal Responsiveness: The Home Environment.

One of the hypotheses in this study is that father's support in some way influences infant development. Specifically, the relationship of father support to maternal responsiveness to her infant was examined. One way to conceptualize maternal responsiveness is to consider the nature of the environment the caregiver provides for her infant. The Home Observation for Measurement of the Environment (HOME Inventory, Bradley & Caldwell, 1984) was chosen for this purpose.

All primary caregivers, in this sample, mothers, were interviewed using the HOME Inventory at time three (twelve weeks).

The HOME Inventory is a combination interview-observation tool administered in the home while the infant is awake and present. In this study, mothers were interviewed using the 0-6 months version. The HOME Inventory is comprised of six subscales (Responsivity of Caregiver, Acceptance of Child Behavior, Organization of the Environment, Play Materials, Parental Involvement and Opportunities for Variety) plus a total score. There are forty-five items, each scored as a + or - depending upon whether the item is observed or reported. Positives are then totaled, no credit is given for negatives. A higher number reflects a more optimal score. (See Appendix B.)

Parent Perception of Infant.

In order to assess their impressions of their infants with respect to ease or difficulty of care, all mothers were asked to complete the Neonatal Perception Inventory (NPI, Broussard, 1971), at Time 1 (two weeks postdischarge) and Time 3 (12 weeks post discharge). The Neonatal Perception Inventory, consisting of two subscales: Your baby and Average Baby, requires the mother to rate her infant on a scale of one to five. A discrepancy score is derived by subtracting the two scores. A low score is considered optimal. That is, a mother who considers her baby to be the same or worse than the average baby is thought to have a negative perception of her infant. (See Appendix C.)

Both mothers and fathers completed the Infant Characteristic Questionnaire (ICQ, Bates, 1977). The six months version used in this study is comprised of twenty-four items with Likert-type responses ranging from one (very easy) to seven (very difficult). Items are arranged into four factors: Fussy-Difficult, Unadaptable, Dull and Unpredictable. Scoring of factors consists of adding or subtracting ratings on selected responses based upon scoring protocol. High scores reflect an infant who is perceived to be more negative in temperament. (See Appendix D.)

Each parent was instructed to complete the questionnaire individually, that is without collaborating on

responses. The ICQ was administered to the parents at Time 1 and Time 3 during the study.

Finally, selected questions from the parent interviews were designed to tap both maternal and paternel perceptions of their infant's growth and development, health and temperament. Responses were recorded both on a Likert-type scale as well as descriptively. (See Appendix E.)

Father Support.

In order to assess the impact of father support as both a direct and indirect influence on the mother and infant it was necessary to measure support in the following ways:

1. Mother's report of father support as a rating from 1 to 5 (5= highest rating),
2. Mother's rating of father help, a rating of 1 to 5 (5 = highest rating)
3. An assessment of support other than father support such as support from family and friends,
4. A Typical Day Survey in which mothers were asked to respond to thirteen items regarding who provided care for the infant over a 24 hour period.

This survey was completed via telephone at Time 2 (4 weeks post discharge). Other support ratings were taken at all three times during the study. (See Appendix E.)

Parent Perception of Current Life Situation.

All mothers and fathers in the study were asked to complete the adult version of the Locus of Control Scale (Norwicki & Duke, 1972). The scale is designed to tap perception of various life events as within (internal) or beyond (external) one's control. Parents were asked to complete the questionnaire individually, at Time 1 and Time 3. The scale is comprised of forty questions requiring a yes-no response. Items are scored towards externality. Thus a high score reflects a feeling by the indivdual that life events are beyond his or her control. The use of this scale in this study was intended to examine differences between preterm and fullterm groups regarding locus of control during the transition to parenthood. (See Appendix F.)

Satisfaction with Life.

In order to assess parental well-being, mothers and fathers were asked to rate their satisfaction with their current life situation. Adapted from Crnic et al. (1983), responses are selected from a five point Likert-type scale (5=best) at all three times during the study. Descriptive responses were also recorded. (See Appendix E.)

Additionally, fathers were asked to rate their satisfaction with their role as father, the degree to which fatherhood had changed or interrupted life plans and satisfaction with his involvement in infant caretaking.

Responses were recorded on a Likert-type scale and descriptively. (See Appendix E.)

Primary Concerns.

Based upon interviews designed by Barnard (1977), mothers and fathers were instructed to "List three primary concerns about anything" during the parent interview at Time 1,2,3 for the mothers and Time 1 & 3 for fathers. Concerns were recorded descriptively and analyzed for their focus on self, baby or other (i.e. finances, living arrangements). (See Appendix E.)

Parent Interviews.

The parent interviews were designed to elicit information in both a structured and unstructured format. In order to capture elements concerning new parenthood, premature birth and support items were culled from several sources (Barnard, 1977; Crockenburg, 1985; Crnic et al., 1983). Additional items were designed by the principal investigator to tap information such as parental impressions of their infant's growth and development and parental adaptation to their new roles, important to this study. (See Appendix E.)

Maternal Attitude.

In an effort to tap maternal views on childrearing and

issues surrounding the birth of their baby, the Maternal Attitude Scale (Hock, 1978) was given to all mothers in the study. Based upon the work of Cohler (1977), Hock selected 21 items which yielded high loadings on a factor concerned with maternal satisfaction to comprise the Maternal Attitude Scale. (See Appendix G.)

C H A P T E R IV

RESULTS.

Analyses of data include two-way analysis of variance, Pearson correlations, principal factor analysis and discriminant analysis.

Background Information

Maternal data.

The demographic information for the 21 mothers participating in this study is presented in Table 1 . There were twenty white mothers and one black mother. All had completed twelve or more years of school and represented a wide range of ages. All were married and living with the father of their baby.

Obstetric information pertaining to delivery and parity are also listed in Table 1. Caesarian births were represented slightly more in the preterm group. The two groups were balanced in terms of parity.

Paternal data.

The demographic information for the twenty-one fathers participating in this study is presented in Table 2. Like their spouses, the fathers in this study represented a wide range of ages, and had completed twelve or more years of school. There were 20 white fathers and one black father.

Infant data.

Data concerning infant birth status are presented in Table 3 . There were, of course, major differences in gestational age and length of hospitalization between the two groups. The groups are balanced for sex

Table 1.

Maternal Demographic Information

	Maternal Age (Years)		
	$\bar{x}$	S.D.	Range
Preterm (n=11)	28.9	5.2	20-36 yrs.
Fullterm (n=10)	29.0	5.0	21-36 yrs.

Education	Preterm	Fullterm
<12 yrs.	1	0
12 yrs.	5	1
>12 yrs.	5	9
Delivery		
Vaginal	3	6
Caesarian	8	4
Parity		
Primiparous	6	6
Multiparous	5	4
Race		
Black	1	0
White	10	10

Table 2.

Paternal Demographic Information

	Paternal Age (Years)		
	$\bar{x}$	S.D.	Range
Preterm (n=11)	32.7	8.6	26-56
Fullterm (n=10)	31.5	8.5	23-40

Education	Preterm	Fullterm
<12 yrs.	1	0
12 yrs.	5	2
>12 yrs.	5	8
Race		
Black	1	0
White	10	

Table 3.

Infant Birth Data

Gestational Age (weeks).

# weeks	Preterms	# Weeks	Fullterms
26	1	38	2
29	1	39	2
31	1	40	3
32	1	41	1
33	2	42	1
34	3	44	1
35	1		
36	1		

Sex

	Male	Female
Preterm	4	7
Fullterm	4	6

Length of Hospitalization (days)

	$\bar{x}$	S.D.	Range
Preterm	50.7	34.1	10-119 days
Fullterm	3.4	1.4	1-5 days

Birthweight	$\bar{x}$	S.D.	Range
Preterm	1876g.	34.45	822-3033g.
Fullterm	3427g	21.00	2807-4040g.

Differences Between Fullterms and Preterms.

It was expected that families of preterms would differ from families of fullterms on a number of dimensions. Results illustrate both similarities and differences between the groups in this sample.

Analysis of Background Variables.

Analysis of variance showed no significant differences between the means on any background variables between the fullterm and preterm groups (See Tables 1,2,3). Pearson correlations produced several correlations.

The age and education of the parents showed expected intracorrelations, but only for the fullterm group. That is, maternal age correlated significantly with maternal education and paternal age with paternal education. Additionally, father age and education was significantly correlated with mother's age and education for fullterms only. Gestational age was negatively correlated with the number of days the infant was hospitalized for preterms ($p<.05$). Sex of the infant yielded no significant correlations.

Father Support.

Father support and father help were measured by mothers' ratings on Likert-type scales at all three points

in time (5=highest rating). For preterms, father support and help were positively correlated with scores on the Neonatal Perception Inventory at time 1 and time 2. In particular, father support at time 2 and 3 was highly correlated with the NPI time 1 ($p<.001$). Father help, time 1 was also highly correlated with the NPI, time 1 ($p<.001$). There were significant correlations between father support time 2 and 3 and the Denver Developmental as well. On the other hand, father support and help for fullterms yielded mixed positive and negative correlations. Only one correlation, that between father help at time 2 and the Denver Developmental, was significant ($p<.05$) and this was a negative association. Pearson correlations for the Neonatal Perception Inventory and the Denver Developmental with Father Support and Father Help are found in Table 4.

Fullterms and preterms showed significant associations between various HOME Inventory subscales and Father Support and Father Help (see Table 5). For the fullterm group, Father Support and Father Help were weakly correlated with HOME subscales: Acceptance, Play and Variety. For preterms, correlations between father support and help with HOME subscales: Organization, Play, Involvement and the total score were stronger.

Finally, analysis of variance showed fathers of preterms were rated significantly higher than fathers of

Table 4.

Correlations for Father Support and Father Help with the Denver Developmental and Neonatal Perception Inventory.

	Group	NPI time 1	NPI time 2	Denver
Father Support 1	PT	.3464	.2609	-.0430
	FT	-.3780	.1021	-.2182
Father Support 2	PT	.8480***	.4842	.6078*
	FT	.1890	.1021	.3273
Father Support 3	PT	.8151***	.3382	.5750*
	FT	-.3780	.1021	-.2182
Father Help 1	PT	.8151***	.3382	.3363
	FT	-.2500	.4082	.2182
Father Help 2	PT	.3200	.3357	.3130
	FT	-.4588	-.4924+	.5922*
Father Help 3	PT	.4667+	.1936	.1242
	FT	-.3430	.1873	.4005

Pearson Correlation, r=.50
*** p<.001
** p<.01
* p<.05
+ p<.10

fullterms for help at time 2 and 3 (See Table 20).

To summarize, as hypothesized, it appears that father support is associated with a number of variables related to maternal responsiveness, maternal perception of her infant and infant outcome itself. These findings suggest that:

1. For preterm infants, both father support and father help are associated with: a) how positively a mother perceives her infant as measured by the NPI, and b) more optimal infant scores on the Denver Developmental.

2. For both preterm and fullterm infants, father support is associated with maternal responsivity as measured by the HOME. With the exception of the subscale Play, father support appears to influence HOME outcome differently, for the two groups. In addition, for preterms, the presence of strong negative correlations between father support and help and HOME subscales Acceptance and Responsivity suggests that the father may be taking up the slack or substituting for a less responsive, less accepting mother.

3. The extent of father support and help may be associated with his own sense of well-being (satisfaction with life). This association was found for both groups and for the sample as a whole. Thus, his own "availability" to his family

may be directly related to positive feelings about himself and his life situation.

4. An expected association between father support and maternal well-being was evident for preterms only. Furthermore, maternal well-being at time 3 was related to father support at all times, suggesting a cumulative effect of support over time.

While the mean scores of mothers in both groups did not differ significantly on satisfaction with life (well-being), for mothers of fullterms, life satisfaction was associated with maternal and paternal age and education and information regarding child development accessed through reading.

Background variables and father support. There appears to be a relationship between demographic variables and Father Support/Help (See Table 6). For example, for mothers of preterms, age was positively associated with Father Help at time 1 ($p<.05$). Additionally, for fathers of preterms, age was positively correlated with Help at time 2 and approached significance at time 1. For fathers of fullterms, more education was weakly associated with Support, time 1 and Help, time 3.

For the sample as a whole, there is a negative correlation between gestational age of the infant and Father Help at time 2 and 3.

Table 5.

Correlations Between Father Support and Father Help and the HOME Inventory.

Preterm Group (n=11)

HOME Scale	Support time 1	Support time 2	Support time 3	Help time 1	Help time 2	Help time 3
Responsive	-.0833	.1412	.1429	-.2249	-.5427*	.0289
Acceptance	-.6375*	-.1576	-.3214	.1205	-.3105	.1840
Organization	.4980+	.1875	-.0558	-.0558	.1086	-.1491
Play	-.2142	.5294*	.5602*	.4117	-.3849	-.0618
Involvement	.1427	.8063***	.6477*	.5038+	-.0494	.3296
Variety	-.2753	-.2666	.0793	-.2115	.1953	.3784
Total	-.1388	.5589*	.4755+	.3471	-.2826	.1436

Fullterm Group (n=10)

HOME Scale	Support time 1	Support time 2	Support time 3	Help time 1	Help time 2	Help time 3
Responsive	.2592	.1512	-.1728	.1728	.0521	-.2180
Acceptance	-.1280	.5121+	-.1280	.1280	-.1544	-.3819
Organization	.0417	.0417	-.3750	-.3889	.1759	-.2103
Play	.6875*	.0625	.0625	.2500	-.1131	.5449+
Involvement	.1336	-.0334	-.3675	-.1336	.1612	-.1380
Variety	.4910+	.4910+	-.0546	.5092+	-.3948	.0250
Total	.2770	.1904	-.2857	.0693	.0470	-.1867

Pearson correlation, r=.50
*** p<.001
** p<.01
* p<.05
+ p<.10

Table 6.

Significant Correlations Between Father Support and Father Help and Background Variables.

Variable	Preterm (n=11)	Fullterm (n=10)
Mother Education	_____	Fa. Support 2 .5204+
Mother Age	Fa. Help 1 .6365*	_____
Father Education	Fa. Help 2 .5452*	Fa. Support 1 .4939+ Fa. Help 3 .4945+
Father Age	Fa. Help 2 .7412**	_____
Gestational Age	_____	Fa. Support 3 .5000+
Length Infant Hospitalized	_____	Fa. Support 3 -.4529+
Delivery	Fa. Help 1 .4202+ Fa. Help 2 .4734+	Fa. Help 3 -.6008*
Parity	Fa. Help 3 -.6375*	Fa. Support 3 .5000+
Sex	Fa. Help 2 .4183+	

Pearson Correlation, r=.50
*** p<.001
** p<.01
* p<.05
+ p<.10

1 Note: 0=vaginal/ 1=Caesarian
2 Note: 0=primiparous/ 1=multiparous
Note: 0=male/ 1=female

It appears that the presence of siblings is differently associated with Father Support and Help for preterms and fullterms. For preterms, siblings were negatively associated with Father Help at time 3. For fullterms, siblings were positively associated with Father Help at time 3.

Type of delivery correlated negatively with Father Help time 3 for fullterms. The literature suggests that Caesarian delivery serves to increase father involvement with his family (Parke & Tinsley, 1981) which may explain the correlation found here.

It appears that father support is also associated with father background variables: age and education. One might presume that a higher educational level of the father may be related to an increased sensitivity to his spouse's needs. More plausable, higher educational levels may result in employment situations which are more flexible, allowing for a greater role as helpmate in the family.

Finally, there were a number of positive associations between support and help for both groups (See Table 7). In particular, there was a highly significant correlation between Father Support, time 2 and Father Help, time 1 for preterms ($p<.001$).

It appears that Father Help during the initial transition period (time 1) is particularly salient for mothers in both groups yielding high positive correlations

Table 7.

Correlations Between Father Support and Father Help.

	Group	Father Help 1	Father Help 2	Father Help 3
Father Support 1	PT	.5042+	.5427*	.2887
	FT	.6667*	.0754	.6667*
Father Support 2	PT	.8166***	.2283	.3479
	FT	.6667*	-.3015	.1147
Father Support 3	PT	.6271*	.2096	.4658+
	FT	.6667*	.4523+	.6882*

Pearson Correlation, r=.50

*** p<.001
** p<.01
* p<.05
+ p<.10

Table 8.
Changes in Father Suppport and Father Help Over Time.

	$\bar{x}$	S.D.	t-value
Preterm Group (N=11)			
F. Support, 1	4.72	.467	0
F. Support, 2	4.72	.467	
F. Support, 2	4.72	.467	0.56
F. Support, 3	4.63	.674	
F. Support, 1	4.72	.467	0.56
F. Support, 3	4.63	.674	
F. Help, 1	4.81	.603	0.90
F. Help, 2	4.54	.688	
F. Help, 2	4.54	.688	1.84+
F. Help, 3	4.09	.944	
F. Help, 1	4.81	.603	2.67*
F. Help, 3	4.09	.944	
Fullterm Group (N=10)			
F. Support, 1	4.60	.516	0.80
F. Support, 2	4.40	.966	
F. Support, 2	4.40	.966	-1.96+
F. Support, 3	4.70	.949	
F. Support, 1	4.60	.516	-0.36
F. Support, 3	4.70	.949	
F. Help, 1	4.50	.342	2.40*
F. Help, 2	3.40	.499	
F. Help, 2	3.40	.499	0.19
F. Help, 3	3.30	.949	
F. Help, 1	4.50	.342	3.09*
F. Help, 3	3.30	.949	

* .05, two-tailed+ + .10, two-tailed

with support ratings across all three points in the study. This suggests that a high Father Help rating in the first two weeks following the infant's arrival home from the hospital has lasting effects in terms of how supportive the mother judged her spouse to be across the twelve week span of this study.

Changes in father support and help over time. In order to determine what, if any, changes were taking place with respect to father support and help over the twelve week time period, t-tests were performed in order to identify significant changes (See Table 8). Results indicate that measures of help increased over time while support did not. That is, for preterms, the difference between father help at time 1 and 3 was significant. For fullterms, father help was significantly different at time 1 and 2 and time 1 and 3, as it was when the sample was analyzed as a whole.

That mothers' perception of father support in both groups did not change significantly over time suggests that as a measure, support differed from help. That is, while differences in the more affective or emotional measure of support did not change significantly over the twelve week period, the measure, help, did. This supports Belsky's (1981) finding that as the infant matures, father involvement increases. Additionally, within the twelve week time frame of this study, increased father help may be a result of extended family moving away from their support

efforts in the immediate postdischarge period. The lack of siginificant differences in support over time may also reflect a failure of the measure's sensitivity to detect more subtle nuances of support.

Family and Other Support.

Both family and other support were calculated from the mothers' responses to interview questions regarding assistance with the arrival home of the infant and throughout the twelve weeks of the study. For preterms, this included assistance while the infant was hospitalized. The Typical Day Survey, showed that with the exception of one mother in the preterm group, mothers in both groups reported help received in the 24 hour period measured from spouses only.

Analysis of variance revealed modest group differences for Family Support favoring fullterms. However, there were several significant relationships discovered through Pearson correlation. The highest number of significant correlations were found when data were analyzed for the sample as a whole (n=21). Results suggest that family support is positively associated with infant gestational age and negatively associated with the length of hospitalization of the infant. This implies that healthier babies are associated with greater family support. Additionally, family support was positively associated with the educational level of both the

mother and father, an association not found when the sample was analyzed by group. There were significant positive associations between several of the HOME subscales and family support, the most significant being Involvement ($p<.01$). Again, when the data were analyzed by group, associations with the HOME were weakly correlated with family support.

When data were analyzed by groups, Family Support was positively associated with the Denver Developmental and the Neonatal Perception Inventory, time 2, for the preterm group. For fullterms, Family Support was positively correlated with Neonatal Perception Inventory, time 1, and mothers' rating of their children's development, time 3. That is, family support was positively associated with mothers' perception of their fullterm babies as easy (NPI) and how well they thought their babies were developing. There were modest associations between the Maternal Attitude Scale and family support for preterms, fullterms and the sample as a whole.

Other Support did not yield any significant correlations for the preterm group. For fullterms, Other Support was highly associated with information mothers obtained about their infants by reading ($p<.01$). Other Support was modestly associated with maternal life satisfaction, time 1 and 2 for fullterms. A highly significant negative association was found for fathers of

fullterms between a rating of satisfaction with their caregiving at time 1(.94,p<.001). Perhaps, for this particular group of fathers, the presence of Other Support (assistance from persons outside the family) may have resulted in competition for the infant concerning its care.

All correlations for Family and Other Support are reported in Table 9.

Findings suggest that Family Support and Other Support are following discharge from the hospital in ways similar to father support. In sum, it appears that:

1. Family Support relates positively to child outcome as measured by the Denver, but for preterms only.
2. Family Support is positively associated with mothers' perception of their infants as measured by the Neonatal Perception Inventory for fullterms and preterms as well as maternal rating of infants' growth and development at time 3 for fullterms.
3. The modest association between family support and the HOME subscale: Involvement for both groups suggests that family support may contribute to increased maternal availability to her infant.

Table 9
Correlations Between Family Support and Other Support and Study Variables.

Preterm Group (n=11)		Pearson r
Family Support	Father age	-.5184+
	Denver	.5590*
	NPI 1	-.1000
	NPI 2	.5164+
	MAS	.4763+
	HOME: Involvement	.4944+
	HOME: Total	.4810+
	Father Satisfaction Caretaking	.4930+
Other Support		

Fullterm Group (n=10)		Pearson r
Family Support	Mother age	.4468+
	Mother education	.4804+
	Denver	.2182
	NPI 1	.6325*
	NPI 2	0
	MAS	.3201
	HOME: Involvement	.5345+
	HOME: Total	.3463
	Father Satisfaction Life 3	.6000+
	Father Satisfaction Hospital Care	.5135+
	Gestational Age	.4877+
	Length Hospitalized	-.5468+
	Mother rates Child Development	.6030*
	Father Support 3	-.5000+

Table 9 (cont'd.)

Fullterm Group (n=10)	Variable	Pearson r
Other Support	HOME: Organization	.5092+
	Read	.7638**
	Father Rates Satisfaction Caretaking 1	-.9487***
	Father Rates Child's Development 3	-.7303
	Mother's Life Satisfaction 1	.5238+
	Mother's Life Satisfaction 2	.5175+

Entire Sample (n=21)	Variable	Pearson r
Family Support	Father Education	.4044*
	Mother Education	.3983*
	Gestational age	.5321**
	Parity	-.5477**
	Length Hospitalized	-.5836**
	Denver	.3282+
	NPI 1	.4910*
	NPI 2	.2236
	MAS	.2981+
	HOME: Involvement	.5412**
	HOME: Organization	.4037*
	HOME: Acceptance	.4256*
	HOME: Total	.4678*
	Father's Life Satisfaction 1	.3149+
Other Support	Mother Rates Child's Development 3	.3141+
	Father Rates Child's Development 1	.3347+

Pearson Correlation, r=.50
*** p<.001
** p<.01
* p<.05
+ p<.10

NPI=Neonatal Perception Inventory
MAS=Maternal Attitude Scale

4. Family Support appears to extend its influence to the father, as observed through modest positive correlations with father satisfaction with life for fullterms and satisfaction with caretaking for preterms.

5. When Family Support was analyzed for the sample as a whole, findings suggest that healthier infants (higher gestational age, shorter hospitalizaton) most likely precipitate increased family involvement.

6. The negative association between siblings and family support is both counterintuitive and contradictory in light of qualitative data which suggested that a primary function of family support was helping with the of care of siblings.

The Neonatal Perception Inventory.

For both groups, the Neonatal Perception Inventory (NPI) yielded a number of positive correlations. For example, the NPI at time 1 and 2 was strongly associated with scores on the Denver Developmental for preterms and modestly asociated for fullterms. For preterms, the NPI time 1 and time 2 was strongly correlated with the HOME subscale, Involvement. Because the NPI is a mother's rating of qualities with temperamental attributes such as ease or

difficulty of care, it was expected that the NPI would correlate with mothers' independent ratings of infant temperament and the Infant Characteristic Questionnaire. While no such relationship was found, there was a significant correlation between fathers' independent temperament rating and the NPI at time 1 and 2, for fullterms only.

These findings support Broussard's (1971) conclusion that maternal perceptions of her infant may indeed be related to infant outcome. While the correlation is stronger for prematures, it appears that this effect is operating regardless of birth status.

A lack of association between the NPI and the Infant Characteristic Questionnaire factors may be due to the two measures tapping different infant qualities, although it was expected that there would be some association and are similar to findings reported by Bates et al. (1979).

Finally, as reported earlier, there appears to be a positive effect between father support and how mothers of preterms view their infant. This suggests that a mother who feels supported by her spouse may view her infant more positively. Furthermore, for fathers of fullterms, an apparent relationship between their rating of infant temperament and the NPI suggests a mutual or bidirectional influence between spouses.

Correlations for the Neonatal Perception Inventory are found in Table 10.

Table 10.

Significant Correlations for the Neonatal Perception Inventory, Excluding Support.

	NPI Time 1		NPI Time 2	
Preterms	Denver	.5590*	Denver	.5533*
	HOME:		HOME:	
	Involvement	.7416**	Involvement	.6383**
			Delivery	.5590*
Fullterms (n=10)	Denver	.5000+	Denver	.5345+
	FTR^	.5000+	FTR^	.8018**
Entire Sample (n=21)	Denver	.4588*	Denver	.5241**
	Mother Age	.2994+	HOME:	
	Gest.Age	.4419*	Organiz.	-.3735*
	Length Hosp.	-.5576**		
	Parity	-.4082*		

^ FTR = Father's Rating of Infant Temperament, Time 1

Locus of Control.

A two-way analysis of variance showed no significant differences between groups on the Locus of Control Scale (LOC) at either time 1 or time 2. These results were counterintuitive. That is, it was expected that parents of preterms parents would score higher than those of fullterms,

perceiving events to be beyond their control. As an entire sample, the scores were lower than the expected average, scoring towards high internal control. However, Pearson correlations reveal several notable associations. For example, for fathers of preterms, gestational age is positively correlated for LOC at time 1 ($p<.001$) and time 2 ($p<.05$). For fathers of fullterms, gestational age is significantly associated with LOC at time 2 ($p<.05$). For fathers of preterms, the length of hospitalization and type of delivery are negatively correlated with LOC at time 1. For the mothers of the entire sample, LOC was negatively associated with education at time 1 and time 2 ($p<.05$).

In an attempt to discern differences between mothers' and fathers' scores on the LOC, t-tests were performed. Results indicate that no significant differences exist between mothers and fathers at either point in time, regardless of group membership.

These findings suggest that the experience of new parenthood for this sample, generates higher sense of internal control. For fathers of premature infants in particular, movement toward greater internal control may be associated with two factors related to prematurity: low gestational age and long hospitalization following birth. These findings were unexpected as it was hypothesized that parents of preterms would score higher towards externality, reflecting feelings of lack of control over the events at

that particular time in their lives. It may be that the time in which the measure was taken was, in fact, a time parents were feeling more in control. This could be especially true for parents of preterm infants, who have experienced a shift from hospital care to their own care for their infant. One may speculate that had the LOC been administered at one week following the birth of their preterm infant, scores might have been high on externality.

Maternal Attitude Survey.

The Maternal Attitude Survey (MAS) yielded few significant positive correlations (See Table 11). It appears that for mothers of preterms, scores on the MAS were positively associated with circumstances of the birth, specifically, Caesarian delivery ($p<.01$) and length of hospitalization of the infant ($p<.05$). There were several correlations which approached significance for the MAS with HOME subscales: Organization, Responsiveness and total score for fullterms and Acceptance for preterms. While it was expected that maternal attitude scores might yield associations with infant temperament scores only one such correlation was found, that with the Neonatal Perception Inventory, time 2 for mothers of preterms. This association only approached significance.

Table 11.

Correlations Between the Maternal Attitude Scale and Study Variables.

Variable	Group	Pearson r
Father education	PT	.7959**
	FT	.2737
Delivery	PT	.8016**
	FT	.0091
No. Days Infant Hospitalized	PT	.5269*
	FT	-.1226
NPI, Time 1	PT	.0716
	FT	-.5397+
NPI, Time 2	PT	.4825+
	FT	-.4005
Family Support	PT	.4763+
	FT	.3201
HOME: Responsive	PT	-.3359
	FT	.5247+
Acceptance	PT	.4904+
	FT	-.1390
Organization	PT	.0588
	FT	.4917+
Play	PT	-.1908
	FT	.0244
Involvement	PT	.3016
	FT	.3496
Variety	PT	.2066
	FT	.4039
Total	PT	.2189
	FT	.4995+

Pearson Correlation, r=.50
** p<.01
* p<.05 + p<.10

While the two groups did not significantly differ at their means, mothers of preterms had slightly higher scores on this scale. Furthermore, it appears that their attitudes were in some way influenced by circumstances surrounding the early birth of their infants. It was also one of the seventeen variables identified by discriminant analysis as a variable identified with prediction of group membership.

HOME Inventory.

While findings for the HOME Inventory have been reported throughout this chapter, a summary of findings will be reported here along with subscale associations with the total HOME scores.

As reported earlier, there were a number of positive associations between HOME subscales and Father Support, Father Help and Family Support. Strong correlations were found for the Involvement subscale with the Neonatal Perception Inventory time 1 and time 2 ($p<.01$) for preterms only. Positive associations with the Denver Developmental were found for three subscales for preterms (Play, Involvement, Total) and with the Acceptance subscale for fullterms. There were a number of significant correlations between HOME subscales and the Infant Characteristic Questionnaire, particularly for fullterms. These are reported in Table 14. Finally, the particular subscales which were associated with the total score for the HOME

Inventory were different for the two groups. For preterms, Play and Involvement were strongly correlated with the total score. For fullterms, Responsiveness, Organization, Involvement and Variety were highly correlated with the total scores. For the sample as a whole, Responsiveness, Organization and Involvement were significantly associated with the total scores. Findings for subscales which contribute to total scores on the HOME Inventory are reported in Table 12.

Table 12.

Correlations Between HOME Total Scores and HOME Subscales.

Subscale	Preterms	Fullterms	Entire Sample
Responsive	.2979	.9617***	.8368***
Acceptance	.4080	.4522+	.4675*
Organization	.1632	.6013**	.5043**
Play	.8271**	-.0693	.3219+
Involvement	.6936**	.8468***	.7829***
Variety	.1183	.6838**	.4223*

Pearson Correlation, r=.50

*** p<.001
** p<.01
* p<.05
+ p<.10

Finally, while analysis of variance yielded no significant differences between fullterms and preterms, scores for the fullterm group were slightly higher on all subscales including the total score (See Table 20).

To summarize, it appears that the HOME Inventory is positively associated with the following:

1. Maternal background variables such as age, education and delivery for fullterms.
2. Maternal perception of their infant, for both groups as measured by the NPI and the ICQ.
3. Father Support for preterm infants.
4. Infant outcome measured by the Denver Developmental for both groups.

Furthermore, it appears that the subscales differentiate the two groups. Thus for preterms, the number of highly significant correlations for the Involvement subscale supports Siegel's (1983) findings which identified maternal involvement as the variable which differentiated optimal outcome among infants considered "at risk". For fullterms, the Responsiveness subscale yielded a correlation of .96, $p<.01$ with the HOME total signifies which subscale is important for this particular group of babies.

Collectively, these findings suggest that the HOME Inventory is indeed a valid measure of the environment, serving to clarify the role of environment in development at a very early age.

Denver Developmental.

This single measure, taken at time 3 during the study, showed a significant positive association with the Neonatal

Perception Inventory at both time 1 and time 2 for both groups of babies. Denver scores were positively related with father satisfaction with his contribution to care for the infant for both groups. Of particular interest is the presence of positive associations between Father Support with Denver outcome for preterms but not for fullterms. Family Support was also positively associated with Denver scores for the preterm group only. Table 13 lists findings for the Denver Developmental.

While analysis of variance showed no significant difference between the two groups on Denver scores, chi-square analysis showed a greater number of scores in the questionable range for the preterm group. Interestingly, the only two abnormal scores were in the fullterm group. This may account for the lack of difference between the means of the two groups.

While the Denver Developmental is a gross measure of infant development it was able to discriminate among the two groups in the following ways:

1. That preterms had a higher number of questionable scores than fullterms.
2. That the only two abnormal scores were in the fullterms group.
3. That father variables are positively associated with Denver outcome, specifically, support for preterms and satisfaction with caretaking for fullterms.

Table 13.
Correlations Between the Denver Developmental and Study Variables.

Variable	Preterm (n=11)	Fullterm (n=10)
NPI 1	.5590*	.5000+
NPI 2	.5533*	.5345+
HOME:		
Responsivity	.1614	.1320
Acceptance	.1029	.5867**
Organization	-.0429	-.1455
Play	.6999**	-.2182
Involvement	.8292***	-.0292
Variety	-.1185	.1905
Total	.6386**	.1285
Father Support:		
Time 1	-.0430	-.2182
Time 2	.6078*	.3273
Time 3	.5750*	-.2182
Family Support	.5590*	.2182
Other Support	-.3889	-.5238+
ICQ:		
Fussy, Mo.2	.5307*	____
Fussy, Fa.2	.5574*	____
Dull, Mo.1	.5188+	____
Unpredictable:		
Fa. 1	.5865*	.5803*
Fa. 2	.5387*	____
FSC:		
Time 1	.5430*	.6325**
Time 3	.0313	-.1491
MCD:		
Time 1	-.3922	.6325**
Time 3	-.1336	.7237**

Pearson Correlation, r=.50

*** p<.001
** p<.01
* p<.05
+ p<.10

NPI=Neonatal Perception Inventory
ICQ=Infant Characteristic Questionnaire
FSC=Father's Satisfaction with His Caretaking
MCD=Mother Rates Child's Development

4. That maternal involvement, measured on the HOME Inventory is related positively to Denver outcome for preterms and maternal acceptance for fullterms.
5. That infant temperament is significantly associated with infant outcome for fullterms and preterms.

That is, there were five significant associations between temperament and the Denver for preterms (Fussy: Mo. & Fa. time 2; Dull, Mo. time 1; Unpredictable, Fa. time 1&2) and only one significant correlation for fullterms (Unpredictable, Fa. time 1). This confirms findings by Bates et al.(1979) and Crockenburg (1981), that temperament factors such as fussiness, irritability and unpredictability may, in fact, mobilize parents towards increased involvement with their infant.

Infant Characteristic Questionnaire.

The Infant Characteristic Questionnaire (ICQ, Bates et al. 1979) is designed to measure parents' perceptions of their infant's temperament. The ICQ was given to both mothers and fathers at time 1 and time 3 of the study. Analysis of variance for preterm/fullterm differences revealed two factors in which differences only approached significance. They were: Infant's adaptability, reported by the mother at time 1 and infant's predictability, reported

by the father at time 3. For both factors, fullterm group means were slightly higher than for preterms. However, there were a number of significant Pearson correlations between ICQ factors and the HOME Inventory and the Denver Developmental. These findings are reported in Table 14. It should be noted that for the fullterm group, it is father's report of fussiness, predictability and dullness which accounts for many of the associations with the HOME subscales. For fullterm mothers, fussiness and adaptability factors are correlated with HOME subscales. There were two significant correlations for maternal ratings on the ICQ with the Denver Developmental for preterms, and none for fullterms. However, one factor, predictability, rated by fullterm fathers is significantly associated with the Denver.

Comparatively, preterm fathers' ICQ ratings account for far fewer correlations with HOME subscales. Two factors with significant correlations are fussiness and unpredictability. Interestingly, these are the same two factors which are associated with Denver scores for preterms. This suggests that negative temperament qualities, may infact, precipitate increased caregiver involvement.

In order to determine if a relationship between perceived infant temperament and paternal involvement might be operating, Pearson correlations between fathers' reported Satisfaction with Caretaking, Father Help and Support and

ICQ temperament factors were examined. As seen in Table 17, these variables were indeed associated with ICQ factors, but for the preterm group only. This is particularly interesting in light of findings which suggest that infant temperament is especially salient for fathers of fullterm babies. As the data show, of the three correlations associated with father life satisfaction for the preterm group, two are negative associations.

Finally, in order to asess whether mothers and fathers ratings on the ICQ were different, t-tests were performed. Results showed that for preterms, mothers and fathers at time 1 differed significantly in how adaptable they rated their infants, fathers rating their infants as more adaptable. There was a modest difference on the fussiness subscale at time 2, with fathers rating their infants as fussier. For fullterms, fathers also rated their infants higher on the fussy factor than did the mothers, but at time 1. However, a highly significant difference emerged at time 2 for the predictability factor. Again, fathers rated their infants higher on this factor than did mothers (See Table 15).

In general, findings from the ICQ distinguish preterms and fullterms with respect to the following:

1. Fullterms appear to be more adaptable and predictable than their preterm counterparts.
2. Infant temperament appears to be particularly

salient for fathers of fullterms, yielding three times as many significant correlations as ratings by fathers of preterms. This is confirmed by findings from a principal components analysis which yielded not only a temperament factor for fullterms but an additional factor of fathers' ratings of temperament. That is, two of six factors were accounted for by temperament for the fullterm group. There was no temperament factor from the principal components analysis for preterms.

3. The high number of correlations with the Unpredictability factor for both groups suggests that variation in behavior serves to mobilize the parents' responsiveness towards the infant.

Finally, few significant differences among mothers' and fathers' ratings of their infants suggests that a certain amount of congruence concerning infant perception may be occurring during this time of transition from hospital to home for the families in this study. This congruence may reflect a genuine agreement between parents about their infant's temperamental characteristics. It may also be that the instrument and/or parent perceptions are general and not sensitive enough to behaviors manifested in this early period in the infant's life.

Table 14.

Correlations Between the Infant Characteristic Questionnaire and Study Variables.

Preterm Group (n=11)

ICQ Factor	Variable	Pearson r
Fussy, Mother time 1	HOME: Total	.6108*
	SWL, Mo. 3	.6708*
Fussy, Mother time 2	HOME: Involvement	.5434*
	Family Support	.5646*
Fussy, Father time 1	HOME: Variety	.4869+
	Family Support	-.5579*
	Denver	.5307*
Fussy, Father time 2	HOME: Involvement	.6411*
	Denver	.5574*
Unadaptable, Mo. time 1	HOME: Organization	.4843+
	Mother Education	.5249*
Unadaptable, Mo. time 2	Mother Education	.6295*
	SWL, Mo. 3	.5009+
Unadaptable, Fa. time 1	Father Age	-.6775*
Unadaptable, Fa. time 2	SWC, Fa. 1	.6167**
Dull, Mother time 1	HOME: Responsive	.5247*
	Denver	.5188+
	Parity	-.5241*
	Mother Education	.6041*
Dull, Mother time 2	Mother Education	.5645*
Dull, Father time 1		
Dull, Father time 2		
Unpredictable, Mo. 1	Mother Education	.5331*
Unpredictable, Mo. 2	HOME: Acceptance	.5327*
Unpredictable, Fa. 1	Parity	-.8070***
	Denver	.5865*
	SWC, Fa. 1	.6872**
	Father Help 3	.5517*
Unpredictable, Fa. 2	Denver	.5387*
	Family Support	.4611+
	HOME: Involvement	.6469*

Table 14 cont'd.

Fullterm Group (n=10)	Variable	Pearson r
Fussy, Mother 1	HOME: Variety	.6588*
	HOME: Total	.4960+
	Family Support	.4863+
Fussy, Mother 2		
Fussy, Father 1	HOME: Involvement	.5704*
	HOME: Organization	.7377**
	HOME: Responsive	.8245**
	HOME: Variety	.5864*
	HOME: Total	.8403***
	SWL, Mo. time 1	.5218+
	SWL, Mo. time 3	.5005+
Fussy, Father 2	HOME: Organization	.7700*
	Father Education	.6276*
Unadaptable, Mo.1	HOME: Play	.4959+
	Father Help 2	-.5700*
Unadaptable, Mo.2	HOME: Variety	.5855*
	Father Help 3	.4446+
	Parity	.6261*
	Family Support	-.6261**
Unadaptable, Fa.1	Father Education	.5501*
Unadaptable, Fa.2		
Dull, Mother 1		
Dull, Mother 2		
Dull, Father 1		
Dull, Father 2	HOME: Responsive	.5056+
	HOME: Total	.5263+
	Father Education	.5110+
	Father Help 2	.6847*
Unpredictable, Mo. 1		
Unpredictable, Mo. 2		
Unpredictable, Fa. 1	SWC Fa. 3	.5354+
Unpredictable, Fa. 2	Father Support 2	.5614+
	HOME: Variety	.6434*
	HOME: Organization	.6902*
	HOME: Total	.4944+
	Denver	.5803*
	Father Education	.8157**
	Father Age	.6311*

Pearson Correlation, r=.50

*** p<.001
** p<.01
* p<.05
+ p<.10

SWL=Satisfaction with Life
SWC=Satisfaction with Own Caregiving

Table 15.
Differences Between Maternal and Paternal Ratings of Infant Temperament on the Infant Characteristic Questionnaire.

ICQ Factor	$\bar{x}$	S.D.	t-value (two-tailed)
Fullterm Group (n=10)			
Fussy, Mo. 1	15.0	4.39	-2.99*
Fussy, Fa. 1	19.0	3.34	
Fussy, Mo. 2	16.5	6.31	-0.87
Fussy, Fa. 2	18.5	3.62	
Adapt, Mo. 1	8.60	11.95	-0.14
Adapt, Fa. 1	9.30	5.73	
Adapt. Mo. 2	13.40	10.36	1.40
Adapt. Fa. 2	10.10	5.42	
Dull, Mo. 1	1.50	7.07	-0.83
Dull, Fa. 1	3.80	3.49	
Dull. Mo. 2	3.50	16.43	0.47
Dull, Fa. 2	1.00	2.70	
Predict, Mo. 1	9.00	2.30	-0.91
Predict, Fa. 1	10.00	2.98	
Predict, Mo. 2	6.60	1.17	-4.74***
Predict, Fa. 2	9.60	2.41	
Preterm Group (n=11)			
Fussy, Mo. 1	16.63	4.96	-0.62
Fussy, Fa. 1	17.45	5.12	
Fussy, Mo. 2	13.22	4.68	-2.20+
Fussy, Fa. 2	17.00	5.95	
Adapt, Mo. 1	4.27	3.52	-2.77*
Adapt, Fa. 1	7.45	3.98	
Adapt, Mo. 2	7.44	3.87	-0.64
Adapt, Fa. 2	8.50	4.55	
Dull, Mo. 1	1.90	4.41	-0.79
Dull, Fa. 1	3.09	1.92	
Dull, Mo. 2	-0.66	2.50	-1.70
Dull, Fa. 2	3.22	6.37	
Predict, Mo. 1	8.81	3.28	0.16
Predict, Fa. 1	8.63	2.54	
Predict, Mo. 2	6.88	3.51	-0.26
Predict, Fa. 2	7.22	2.86	

***.001
** .01
* .05
+ .10

The differences which did emerge suggest a developmental trend for parents and infants in the preterms group may have been operating. That is, as fathers of fullterms perceived their infants as fussier at time 1, so did fathers of preterms at time 2. The large difference on the predictability factor for fullterms again highlights the significance of this temperament factor for the fathers in this group.

Primary Concerns.

At each time of contact during the study, parents were asked to tell their "three primary concerns about anything." These concerns were then tallied and coded to reflect the following categories: focus on self, focus on infant, and focus on matters other than self or baby, such as financial matters. Analysis of variance for preterm and fullterm groups showed a significant difference with respect to focus on the infant. As expected, mothers of preterms had significantly more concerns about their infants at time 1 than did their fullterm counterparts ($p<.05$). At time 3, it was fathers of preterms who had more concerns about their infants than did fathers of fullterms ($p<.05$). The focus of concerns, for the most part however, were primarily the same for the two groups. That is, aside from the two reported ANOVA findings, there were no significant differences (See Table 20). The following section includes the qualitative findings regarding parent concerns.

Satisfaction with Life.

At all three times of contact, parents were asked to "rate your current life situation". This was intended to elicit a sense of maternal and paternal well-being during the transition to parenthood. It was expected that satisfaction with life would be, in part, related to infant characteristics. While analysis of variance showed no significant differences between how preterm and fullterm parents rated their satisfaction with life, Pearson correlations revealed a number of significant relationships related to infant characteristics as well as support variables. For example, for mothers of preterms, reported satisfaction with life at time 3 was positively associated with father support at all times as well as father help at time 1 & 3. For mothers of fullterms, there was a weak correlation ($p<.10$) between satisfaction with life at time 1 and time 2 and Other Support (See Table 16).

For fathers of fullterms, reported satisfaction with life was positively associated with Father Support at time 1 and time 2 and weakly correlated with Family Support. There was a weak negative correlation between life satisfaction and parity, suggesting that for fathers of fullterms, greater life satisfaction was associated with firstborns.

For fathers of preterms, satisfaction with life was positively associated with Help and Support. Evidence suggesting that the infant influences fathers' life

satisfaction was found in the positive associations with the number of reported health problems in the first week at home and a high rating by the father on the ICQ: Dull factor at time 1. It may also be that a positive outlook on life by these fathers served to influence their perceptions of their infants. Preterm characteristics also appear to be negatively associated with their fathers' life satisfaction. These included a weak negative association with ICQ: Unpredictable factor ($p<.10$), fathers' rating of infants' temperament as difficult during the first week at home and a low rating of their infants' development at 12 weeks post discharge.

In sum, infant characteristics did yield a number of significant correlations but only for the preterm group. Thus, for both mothers and fathers of preterm infants there were positive associations between reported life satisfaction and the Neonatal Perception Inventory and the Infant Characteristics Questionnaire.

Qualitative analysis of the responses of mothers regarding the rewards and challenges of motherhood provides additional insight regarding infant characteristics which influence maternal well-being during the transition to parenthood.

At time 1 and time 3, mothers were asked, "What is the hardest part (and best part) about being a mother?" Analysis of the responses to these questions identified differences

in what is both rewarding and difficult for mothers of preterms versus fullterms in this sample.

At time 1 and 3, for example, mothers of fullterms found the positive temperamental qualities of their infants rewarding. They referred to their babies as "good", "easy", and "alert". Additionally, mothers of fullterms found their infants' dependency upon them rewarding as did they intimate interactions such as cuddling and "being close".

In contrast, mothers of preterms identified their infants' gains (in general terms), having the infant home and "knowing that he is mine" as the rewards of mothering.

By time 3, preterm mothers sounded more like their fullterm counterparts as they derived pleasure in mothering from infant smiles and "how he responds to me". However, concerns about infant growth persisted at time 3 for mothers of preterms. "To see him(her) grow" was mentioned by over half of these mothers. Mothers in the two groups also differed with respect to what they felt were the most difficult parts of mothering. For mothers of fullterm babies, concerns about siblings, dividing time equally between siblings and their new infant were most often cited. At both time 1 and 3 mothers of fullterms identified personal issues such as lack of sleep, lack of time and restriction of personal freedom as the hardest part of mothering. By time 3, an additional problem of coordinating work with family life was cited. For the mothers of

Table 16.

Significant Correlations Between Maternal Rating of Life Satisfaction and Study Variables.

Preterm Group (n=11)	Pearson r
Satisfaction with Life, time 1	
Neonatal Perception Inventory,1	.4183+
Father's Satisfaction with Hospital	.6000*
Father's rating self change	-.5127+
Father Help, 3	.6773***
ICQ Factor: Unpredictable, Mo. 1	.4257+
Satisfaction with Life, time 2	
Father's rating self change	-.4982
Father Help, 2	.5087+
Satisfaction with Life, time 3	
Neonatal Perception Inventory, 1	.5369*
Mother's infant temperament rating	-.5311*
Mother's rating spouse change	.6104*
Father's rating self change	-.4624+
Parity	-.4813+
HOME: Acceptance	-.5028+
ICQ Factor: Fussy, Mo. 1	.6708*
ICQ Factor: Unadaptable, Mo. 2	.5099+
Mother's satisfaction with hospital	.4179+
Father Support, 1	.8192***
Father Support, 2	.6754**
Father Support, 3	.5359*
Father Help, 1	.5359*
Father Help, 3	.5880*
Fullterm Group (n=10)	
Satisfaction with Life, time 1	
Maternal age	.5407+
Other Support	.5238+
HOME: Organization	.8729***
HOME: Play	.4910+
Read	.7638**
Locus of Control, 2	-.5283+

Table 16 (cont'd.)

Satisfaction with Life, time 2	
Maternal age	.4817+
Father age	.4600+
Father education	.4970+
Other Support	.5175+
Maternal Attitude Scale	.4456+
HOME: Organization	.7906**
HOME: Play	.5929*
ICQ Factor: Unadaptable,Mo.1	.4802+
Read	.7906**
Locus of Control, 2	-.6693*

Fullterm Group (Mothers)

Satisfaction with Life, time 3	Pearson r
Maternal age	.4471+
Locus of Control, 2	.4981+
HOME: Responsive	.6381*
HOME: Play	-.4900+
HOME: Involvement	.5641*
HOME: Total	.5951*
ICQ Factor: Dull, Mo. 2	.5151+
ICQ Factor: Unpredictable, Mo. 2	-.4627+
Professional	-.6030*

Pearson Correlation, r=.50

*** p<.001
** p<.01
* p<.05
+ p<.10

Table 17.
Significant Correlations Between Paternal Reported Satisfaction with Life and Study Variables.

Preterm Group (n=11)	Pearson r
Satisfaction with Life, time 1	
Satisfaction with hospital	-.6623*
Infant Problems, first week home	.5863*
Father Satisfaction with Role	.5017+
Father Satisfaction with Own Caregiving 3	-.4844+
Locus of Control, time 2	-.5052+
Father Support, 1	.5487*
HOME: Organization	.6071*
HOME: Variety	-.5838*
ICQ Factor: Dull, Fa. 1	.6618*
ICQ Factor: Unpredictable, Fa. 1	-.5165+
Satisfaction with Life, time 3	
Delivery	.4224+
Father Support, 1	.6708*
Father Help, 2	.5250*
HOME: Responsive	-.5342*
HOME: Organization	.4399+
HOME: Play	-.4291+
Father rates child's development, time 3	.5926*
ICQ Factor: Dull, Fa. 2	-.5000+
Father rates infant temperament, 1 week	-.4303+

Fullterm Group (n=10)	
Satisfaction with Life, time 1	Pearson r
Father's Satisfaction with Hospital	.5482*
Father Support 1	.6124*
Father Support 2	.6124*
Satisfaction with Life, time 3	
Father Education	.6093+
Parity	-.6000+
Maternal Attitude Scale	.6589*
Father Help, 3	.5477+
Family Support	.6000+
HOME: Involvement	.7354*
HOME: Total	.5431+

Pearson Correlation, r=.50*** p<.001 **p<.01 *p<.05
+p<.10

preterms, personal concerns did not emerge until time 3. The difficulties the mothers of preterm babies identified also concerned infant growth and development, particularly health and feeding concerns and how to be effective with a fussy or difficult baby. Mothers of fullterms did not raise this issue of meeting their infants' needs, although it was a theme common to the mothers of the preterm babies.

In sum, it appears that parental well-being is derived from a variety of sources. For mothers of preterm infants, well-being was associated with spousal support and gains in their infants' growth and development. For mothers of fullterms, well-being was associated with information concerning child development gained from reading, their spouses' and their own age and education level and infant temperament factors: dull and unpredictable.

Infant Development.

Evidence that infant development was perceived in qualitatively different ways was found when mothers' impressions of their infants' growth and development were examined. Responses to the question "Describe what new things your baby is doing since we last spoke..." (See Appendix B) were analyzed for variety and frequency of descriptors used. Most mothers, regardless of the birth status of their infants, tended to use the same descriptions. There were some interesting exceptions, the

most striking being the absence of reported smiling by mothers of preterms until time 3. This is similar to findings reported by Anisfeld (1982). In her study of the onset of smiling, both preterm and fullterm infant smiling occurred around 44 weeks post-conceptual age. That is, preterms could be expected to smile 44 weeks after conception regardless of the amount of time spent in the extrauterine environment. She therefore suggested using a corrected age when calculating the expected time of onset of smiling for preterm babies.

In the present study, preterm mothers never used the term "aware" to describe their babies, a term used by nearly all the fullterm mothers. Preterm mothers at time 1, tended to use very general terms to describe development: "He's doing really well.", "She's come a long way." Furthermore, mothers of fullterms described their babies with temperamental qualities at all points in the study. While there were a few references to temperamental qualities by mothers of preterm infants at time 2, it wasn't until time 3 that the two groups began to "sound alike" with respect to the language they used to describe their babies.

Stages in the Transition to Parenthood.

The transition to parenthood for the parents in this sample conformed to the stages identified by Wandersman,

Wandersman and Kahn (1980). In the present study, analysis of the transition was captured with respect to changing focus of concerns on the part of parents, reported satisfaction with life and maternal report of the growth and development of the infant.

Results from analysis of primary concerns indicate that while all parents in the study moved through the four stages identified by Wandersman et al.(1980), parents of preterm infants differed in two important ways. As noted earlier, analysis of variance of focus of primary concerns showed that parents in the preterm group had significantly more concerns surrounding their infants than their fullterm counterparts. Qualitative analysis of the best and most difficult part of mothering supports a trend by mothers of preterm infants in this sample, to focus upon their infants' growth and development. When asked to describe their feelings upon bringing their infant home from the hospital, parents of preterms like parents of fullterms used words such as "relieved" and "overjoyed". However, they tempered their remarks with expressions of fear of continued infant health problems and questioned their ability to be "as expert as the hospital" in meeting their infant's needs. It appears that for parents of preterms there is a heightening of the health and welfare factor for their infant (stage 1) which persisted throughout the twelve weeks of this study.

Evidence of stage 2, a reorganization from dyad to

triad, was found for both groups. Responses to the question, "Describe how you felt bringing your baby home..." prompted an equal number of responses regarding an eagerness to "be a threesome" and "establish a family routine". It was expected that the parents of preterm infants would be particularly focused on this issue. While responses indicate that the groups did not differ on this factor, parents of preterms may have been reorganizing their family to include a new infant well in advance of discharge.

Stage 3, reorganization of the family's social network was not apparent from the interview data. It may be that interview questions did not adequately tap this information. Only one father reported on the social isolation his wife had experienced due to the lengthy hospitalization of their premature infant. However, the results of analysis of variance and Pearson correlation regarding family support suggest that extended families are more involved surrounding the birth of a healthy, fullterm infant. During the first few days at home with their infants, all mothers of fullterms and six of eleven preterm mothers had family members present. For the parents of preterm infants in this sample, half received assistance by friends, neighbors or formal sources such as the Visiting Nurse Association or an early intervention team. These differences suggest that the hospitalization of an infant redefines the birth of a new infant as a nuclear family affair, perhaps isolating the

parents of the preterm infant. A more plausible explanation may be that the parents of preterms are forced to rely on one another during the hospitalization of their infant, which in terms of time and resources, may not be realistically available from relatives. As Belsky (1984) points out, it is proximity which generates support. For the parents of preterm infants in this sample, the difference in family support might also be explained by lack of proximity to family members.

Finally, the ability to meet the changing demands on financial resources, Stage 4, was mentioned by nearly all families in the study. For two families with preterm infants, hospitalization costs were a serious concern.

In sum, it appears that all parents in this sample conformed to the four stages identified by Wandersman et al (1980) during the transition to parenthood in the twelve weeks following discharge from the hospital as follows:

1. For parents of preterms, there was an expected heightening of the health and welfare factor for their infant.
2. There were no apparent group differences in the desire for parents to reorganize from dyad to triad.
3. There was a significant association between family support and healthy, fullterm infants suggesting that the birth of a preterm infant alters the

birth of a newborn as a "family affair."

4. While it was expected that families of preterm infants would express a greater number of financial concerns, there were no apparent group differences.

Typical Day Survey.

At time 2 in the study, all mothers were asked to account for assistance with routine infant caregiving tasks in the previous 24 hour period. Answers were tallied and categorized as "mother alone", "father alone", "mother and father together", and "others". Analysis of variance revealed no significant differences between group means. Tasks fathers performed were then analyzed for variety. That is, what were the tasks that fathers of preterms and fathers of fullterms did? At first, the fathers of preterms appear to be involved in a far greater number of tasks than fathers of fullterms (13 tasks vs. 3 tasks). However, when tasks represented by only one subject were discounted, the results were comparable.

There were group differences in the number of tasks performed by mothers and fathers together. Parents of preterms were involved in twice as many joint caregiving tasks as compared to parents of fullterms, although they represent the same variety of tasks. Results of the Typical Day Survey are illustrated in Table 18.

Table 18.
Results of the Typical Day Survey.

Preterm Group (n=11)

Caregiving Activity	% Mother Alone	% Father Alone	% Mother & Father Together
1. Got up with baby during the night	63.6	9.1	27.3
2. Got up with baby in the morning	63.6	18.2	18.2
3. Gave baby breakfast	90.9	9.	0
4. Dressed baby	72.7	18	9.1
5. Took baby to center or sitter	0	0	0
6. Picked baby up from center or sitter	0	0	0
7. Gave baby lunch	90.9	9.1	0
8. Put baby down for nap	72.7	9.1	9.1 9.1*
9. Gave baby supper	72.7	18.2	9.1
10. Bathed baby	81.8	9.1	9.1
11. Dressed baby for sleep	81.8	9.1	9.1
12. Put baby to bed	90.9	9.1	0
13. Changed most diapers today	81.8	9.1	9.1

*represents caregiving by someone other than mother or father

Fullterm Group (n=10)

Caregiving Activity	% Mother Alone	% Father Alone	% Mother & Father Together
1. Got up with baby during the night	90.0	0	10.0
2. Got up with baby in the morning	90.0	0	10.0
3. Gave baby breakfast	100.0	0	0
4. Dressed baby	90.0	10.0	0
5. Took baby to center or sitter	0	0	0
6. Picked up baby from center or sitter	0	0	0
7. Gave baby lunch	80.0	20.0	0
8. Put baby down for nap	70.0	20.0	10.0
9. Gave baby supper	100.0	0	0
10. Bathed baby	90.0	0	10.0
11. Dressed baby for bed	100.0	0	0
12. Put baby to bed	80.0	0	20.0
13. Changed most diapers today	90.0	0	10.0

These "other findings" serve to further illustrate the ways in which parents of preterm infants and parents of fullterms infants differ. Most significant perhaps, is the finding that for preterm mothers, satisfaction with life (well-being) is related to father support and help and that this effect is cumulative. Accordingly, while mothers of both groups did the majority of caregiving tasks in the Typical Day Survey, mothers of preterms were twice as likely to receive assistance from their husbands.

Principal Factor Analysis.

All variables in this study were subjected to a principal factor analysis with varimax rotation. The purpose of this analysis was to reduce the number of variables into meaningful factors salient to the study construct. Factors were selected with eigenvalues of 1.0 or greater. Variables with loadings of .50 or greater were chosen. In some cases, a single variable with a very high loading was selected.

Analysis yielded six primary factors for preterms, fullterms and the sample as a whole and are reported in Table 19. Most notable is factor "Father Support" common to all three subject groupings. Preterms and the entire sample share "Environment" and "Age & Education of Parents" as common factors. Surprisingly, temperament emerges as a

Table 19.

Principal Components Analysis.*

Factor	Preterm (n=11)	Fullterm (n=10)	Entire Sample (n=21)
1	Gestational Age	Temperament	**
2	Parent Age & Education	Father Support	Temperament
3	Denver	Parents' Rating of Child's Development	Environment
4	Maternal Well-being	Fathers' Temperament Rating	Parent Age & Education
5	Father Support	Paternal Well-being	**
6	Environment	Maternal Attitude	Father Support

*All factors with eigenvalues greater than 1.0.
Based on variables with loadings of .50 and higher.

** Factor uninterpretable.

Table 20.
Analysis of Variance for Preterms and Fullterms on Selected Outcome Measures.

Variable	Between Group Sum Sqs.	DF	Within Group Sum Sqs.	DF	F	Sig. F
NPI 1	.2000	1	3.00	18	1.20	.28
NPI 2	.0212	1	4.64	19	.08	.77
Denver	.0848	1	8.58	19	.18	.66
MAS	188.0000	1	4319.80	19	.82	.37
HOME:						
Responsive	3.5000	1	63.63	19	1.04	.31
Acceptance	.3150	1	14.82	19	.40	.53
Organization	2.2013	1	22.32	19	1.90	.18
Play	1.0824	1	22.72	19	.90	.35
Involvement	1.5501	1	40.7	19	.72	.40
Variety	1.5436	1	25.4	19	1.12	.30
Total	57.9800	1	418.58	19	2.63	.12
LOC Mo. 1	.1732	1	161.63	19	.02	.88
LOC Mo. 2	14.45	1	344.10	18	.75	.39
LOC Fa. 1	8.85	1	410.10	19	.41	.52
LOC Fa. 2	4.02	1	107.65	19	.63	.43
Fa. Sup. 1	.0848	1	4.58	19	.35	.56
Fa. Sup. 2	.5610	1	10.58	19	1.00	.32
Fa. Sup. 3	.0212	1	12.64	19	.03	.86
Fa. Help 1	.5303	1	14.13	19	.71	.40
Fa. Help 2*	6.87	1	27.12	19	4.81	.04
Fa. Help 3+	3.27	1	17.00	19	3.66	.07
Family Sup.*	.6587	1	3.62	19	3.44	.07
Other Sup.	.0273	1	3.78	19	.13	.71

* .05
+ .10

factor only for fullterms and the entire sample. Data analyzed for the sample as a whole yielded four easily identifiable factors and two factors for which there was no clearcut identity and were therefore uninterpretable.

For all subject groupings, it is possible to identify various constellations of infant characteristics, parent characteristics and support.

Discriminant Analysis.

In order to discern which variables were most predictive of group membership, a discriminant analysis was performed.

An analysis which included data from all points in the study selected fifteen variables which together were able to predict group membership with 85.7% accuracy. Breakdown of group assignment revealed correct classification for all of the fullterm infants while eight of the eleven preterm infants were correctly classified. That is, three of the preterm infants were assigned to the fullterm group. Because missing data was confined to collection point 3 in the study, an analysis was performed on time 1 data alone. This resulted in correct classification of infants with 95.2% accuracy, with only one preterm infant being assigned to the fullterm group. This time 1 analysis yielded seventeen

variables combining to predict group membership, including Father Support at time 1 and Other Support.

The discrepancy between the two analyses may be due to missing data at time three as originally speculated. However, the difference may also reflect a trend towards congruence between the two groups over time. It should be noted that it was primarily background variables which, in combination, served to predict group membership. Additionally, the above analysis included variables of gestational age and number of days the infant was hospitalized. Because these two variables alone might predict group membership, they were removed from subsequent analyses. Variables which showed strength as predictors from the initial anlaysis were then run again. They were: background variables and selected outcome measures. Results indicated that background variables classified subjects with 85.7% accuracy. That is, nine of ten fullterms and nine of eleven preterms were correctly classified by background variables alone. Outcome measures predicted better, with 90.4% accuracy. All fullterms and nine of eleven preterms were correctly classified. Outcome measures included: the NPI time 1&2, Denver Developmental, Maternal Attitude Scale, Locus of Control Scale, and HOME subscales: Responsivity, Acceptance, Organization, Play and Involvement.

Of particular interest are the two preterms classified as fullterms. Who were they? One subject was a preterm who

could be considered the healthiest of that sample, hospitalized for ten days. This infant was classified as a fullterm by discriminant analysis for all manipulations described above. The other was a preterm who might be considered one of the sickest of the sample, hospitalized for three months. Since the variables gestational age and length of hospitalization were removed for this analysis, could it be that outcome measures were similar for these two infants? Inspection of scores revealed higher scores for the healthier baby, particularly on the Denver and NPI. There were missing data from the father for the healthier baby at twelve weeks and from the mother of the sicker baby at twelve weeks. These may have, in some combination, served to influence statistical outcome. While 90% accuracy is very high, the sicker infant's classification as a fullterm may have been due to error in the analysis itself.

Summary of Results

Results of the data analysis may best be summarized with respect to similarities and differences between the preterm and fullterm groups identified primarily through correlations illustrating how the two groups were functioning in the twelve week period following hospital discharge.

Additionally, results are reported with respect to the major hypothesis of this investigation which states that maternal responsiveness to her infant is related to temperament characterstics of the infant and her perception of father support (and help).

Beginning with variables associated with father support, it appears that the background variables of age and education of the father were associated with support/help for both groups. The infant background variable of gestational age yielded a negative correlation for father support suggesting that the infant's birth status sets the stage for father involvement. The presence of siblings was also associated with father support, positively for the fullterm group and negatively for the preterm group.

Evidence for the effects of father support on the mother's responsiveness was found in the analysis of support and help with the various HOME Inventory scales. Interestingly, there were several correlations between these variables for preterms and only one, support with Play, for fullterms. Of particular interest were the two negative correlations between father support and help with HOME Acceptance and Responsiveness scales suggesting a direct effect of father involvement with his preterm infant in the absence of maternal involvement. Effects of father support and help acting to influence the infant indirectly via the mother were found again for mothers of preterms with

correlations for the Neonatal Perception Inventory, HOME scale: Involvement, Play and Total score and for maternal well-being (satisfaction with life). That maternal rating of satisfaction with life for the mothers of preterm infants at time 3 was related to father support and help at all times suggests a cummulative effect of father involvement over time. This was not evident for fullterm mothers. An analysis of changes in support and help over time revealed no significant change in support over time but significant changes in help, for both groups. Collectively, these findings support the major hypothesis of this study: that father support influences maternal responsiveness towards her infant, particularly for mothers of preterm babies.

It appears that support other than that from the father were operating as well. While analysis of variance showed that family support was significantly higher for the fullterm group ($p<.10$), there were a number of correlations which reveal its influence for both groups. For example, family support appeared to influence maternal perception of her infant (NPI) and for fullterms, how a mother rated her infant's development at twelve weeks. There were several correlations approaching significance, suggesting that family support influences maternal involvement as measured by the HOME Inventory. For mothers of fullterm infants, support other than that from family or spouse was weakly associated with her well-being (satisfaction with life).

When the sample was analyzed as a whole, family support was positively associated with the infants' gestational age and negatively with length of hospitalization. Contrary to expected findings, there was a negative correlation between family support and the presence of siblings.

Finally, it appears that family support extended its influence to the father with respect to satisfaction with both life and hospital care (fullterms) and satisfaction with caretaking (preterms).

Infant outcome as measured by the Denver Developmental was related to maternal responsiveness as measured by the HOME Inventory (Play, Involvement, Total) for preterms and Acceptance for fullterms. For preterms, Denver scores were positively associated with maternal perception of the infant on the Neonatal Perception Inventory, father support and his satisfaction with caretaking and family support. For fullterms, Denver scores were also positively associated with fathers' satisfaction with caretaking as well as mothers' rating of the infants' growth and development.

Results of the Infant Characteristic Questionnaire showed infant temperament to be particularly salient for fathers of fullterms. Temperament factors which yielded the greatest number of correlations for either group were the fussy and unpredictable factors.

The Maternal Attitude Scale (MAS) showed that variables associated with prematurity (delivery and length of

hospitalization) influenced the attitudes of mothers of preterms. This suggests that mothers whose preterm babies were delivered vaginally and had shorter hospital stays had more optimal (higher) scores on the MAS. For both groups, maternal attitude was weakly associated with the HOME Inventory.

A measure of Locus of Control showed this sample to score high towards internal control when compared to the expected national average. Analysis of preterm/fullterm, mother/father scores showed no significant differences. However, for fathers of preterm infants, scores on the Locus of Control Scale were negatively associated with gestational age, type of delivery and length of hospitalization.

Regarding the transition to parenthood, it appears that all parents in this study conformed to the four stages defined by Wandersman et al (1980), confirming this study's hypothesis. However, there was an important difference between the two groups. For parents of premature infants there was a heightened concern for the health of their infant including the ability to meet their infants' medical needs.

A principal factor analysis yielded six factors for preterms, fullterms and the sample as a whole. These included various constellations of infant, parent and support variables. Of particular interest is the presence of

a single variable, support, as the only factor common to all three groups .

A discriminant analysis was performed on data collected at time 1 and on data collected at the end of the study. Data at time 1 identified seventeen variables, including support, which correctly classified subjects with 95% accuracy. Data from all points in the study resulted in the identification of fifteen variables and the correct classification of subjects with 85% accuracy. Support was not one of the fifteen variables. Analysis excluding gestational age and length of hospitalization of the infant was then performed in order to further homogenize the groups. Background and outcome measures were run independently in order to determine which variables predicted group membership best. Results identified selected outcome measures predicted with 90.4% accuracy and background variables with 85.7% accuracy.

C H A P T E R V

CONCLUSIONS

In their discussion of the ecological influences on the development of the child, Cochran and Brassard (1979) proposed that the pathways of influence are both direct and indirect. Indeed, in his process model of parenting, Belsky (1984) suggested that there is a "continuum of influence" (p.84) concerning factors which effect individual parenting styles and therefore the child's development.

The purpose of this study was to examine the experiences of families with babies born at term and prematurely, following discharge from the hospital. It was hoped that studying both typical and atypical births within a family context might shed some light on those aspects of the environment which foster optimal developmental outcome for infants at risk on the biological continuum.

Findings from this investigation support an ecological view which recognizes the contribution of both the infant and the spouse upon maternal responsiveness towards the infant. They suggest that spousal support was positively associated with maternal, paternal, and infant variables in the following ways:

1. Maternal well-being, for mothers of preterm infants.
2. Maternal perception of her infant as easy or difficult, for mothers of preterm infants.

3. Infant outcome as measured by the Denver Developmental, for preterm infants.

4. Maternal responsivity as measured by the HOME Inventory for mothers of preterms and fullterms (both positive and negative associations).

The influence of infant characteristics, quantified as temperament, were positively associated with the following:

1. Paternal well-being, for fathers of preterm infants.

2. Maternal responsiveness, as measured by the HOME for mothers of preterms and fullterms.

3. Outcome on the Denver Developmental, for infants in both groups.

4. Maternal and paternal background variables (except paternal age with unpredictable, Fa. 1 for preterms which was negative $p<.05$).

Another goal of this investigation was to compare the experiences of parents during the transition to parenthood upon the infants' arrival home from the hospital. It was expected that parental adaptation to this period would naturally differ due to the disparate circumstances surrounding the birth of their infants. It was also expected that this process of adaptation would follow stages outlined by other researchers. Findings from this study revealed that while there were several differences between parents of preterms versus parents of fullterms, the experience of bringing a new infant into the home was similar for the two groups in many ways.

In sum, the transition to parenthood for the two groups of parents in this study revealed that:

1. The parents of preterms had heightened concern for the health and welfare of their infant throughout the twelve weeks studied.
2. There was more family support for families with fullterm babies.
3. There were no apparent differences between full or preterm groups with regard to changing demands on finances.
4. The mothers of fullterms had a heightened concern about balancing time and attention between the new infant and siblings.

Hypothesis 2, the major focus of this investigation, states that a mother's responsiveness to her infant is influenced both by the infant's ongoing development and her satisfaction with spousal support. Thus, as Goldberg (1977) contends, an infant who continues to make gains reinforces the mother's sense of efficacy. The infant's gains are her reward. We might expect that for mothers of premature babies, such rewards may be more difficult to realize, as these mothers face an infant whose gains are measured against the yardstick of fullterm birth coupled with a potentially difficult behavioral organization. Together these may serve to undermine maternal confidence and self-esteem (Shea, 1984).

While the literature abounds with reports on the buffering effects of social support on stress, research on

these effects specific to premature birth is scant.

The findings of Crnic et al. (1983), like those reported in this investigation, revealed an association between maternal well-being and support. Unlike Crnic, who found no group differences based upon birth status, the majority of significant findings in this study associated with support occurred in the preterm group. It should be noted that data from the two groups in the Crnic study were pooled because of generally high ratings of support and low ratings of stress for the entire sample. In an attempt to explain lack of preterm/fullterm group differences, Crnic suggested that the preterm infants in his sample were generally healthy (under 38 weeks g.a. and less than 1800g.) Furthermore, he proposed that by one month, the crisis of premature birth may have stabilized, allowing time for "mothers and infants to subsequently establish comfortable interactive patterns and routines" (p.216).

Qualitative data from the present study suggest that parents of preterm babies harboured significantly more concerns about their infants' health and well-being, throughout the three month period of the study. Moreover, analysis of mothers' responses to questions about their infants' growth and development suggests that for mothers of preterms, the crisis of premature birth takes on different meaning with approaching milestone development. That is, when mothers perceived their preterm infants to be doing

well, it was qualified with respect to prematurity. Thus, contrary to Crnic's proposition, while mothers of preterms in the present study may have established "comfortable routines," their responses indicate that they continued to manifest a heightened sense of concern for their babies' welfare and their ability to meet their infants needs.

Life satisfaction or the parental well-being of the present investigation should withstand comparison with that of Crnic's study as it is the identical variable in both studies. Indeed, Crnic makes a case not only for the potency of social support but for its specificty as well, buffering life satisfaction but not maternal behavior or attitudes towards child-rearing. Stress, in this case, was a measure of responses to interview questions.

In the present study, correlations strongly suggest that mothers of preterms and fullterms derive their life satisfaction from different sources. Indeed, it is the fullterm group which most resembles Crnic's sample. That is, for the mothers of fullterms, life satisfaction was primarily associated with a number of HOME subscales and maternal attitude. For mothers of preterm babies, life satisfaction was primarily associated with father support and help. Additionally, results suggest that infant characteristics (temperament) were also associated with maternal well-being.

A lack of association between spousal support and

maternal responsivity specific to prematurity was also reported by Yogman (1983). While he found fathers of premature infants to be more involved with their care than fathers of fullterms, analysis failed to revealed significant associations between father support and maternal responsiveness as measured by the HOME and a free- play situation.

The failure of the Crnic and Yogman studies to demonstrate an association between support and maternal responsiveness, in contrast to the findings in the present study may be due to, as Yogman points out, "The medical, behavioral and interactional variability of these infants..." (p.17). Furthermore, while Crnic employed several measures of support in his investigation, Yogman's measure of support was confined to reported assistance received on caregiving tasks similar to the Typical Day Survey used in the present study. In sum, differences in measures of support may contribute to lack of congruent findings.

The lack of differences between preterms and fullterms extends to caregiver responsiveness and outcome measured on cognitive tests (Siegel, 1984; Beckwith & Cohen, 1984; Yogman, 1983). These researchers concluded that the role environment plays in child development becomes more salient as the child gets older. Perhaps the failure to discern differences in outcome based upon birth status is due, in

part, to what is being measured. That is, cognitive test performance may not be a reliable measure of the infant's status in the first year of life, or have much predictive power. Not only is there high variability with respect to the various neonatal courses of the preterm infants, as stated earlier, but neurological sequelae may not be evident in the first months of life, only to emerge later in the child's development.

The results of the present study have revealed a number of highly significant correlations between the HOME Inventory and outcome measures, in particular the Denver Developmental, for both groups. This suggests that measures of the environment may be more useful as predictors of development at later points in time. Indeed, data from Werner and Smith's (1982) longitudinal study of the children of Kauai, Hawaii identified both home stimulation and emotional support of the child as the two most important factors associated with optimal outcome for children considered at risk on both the biological and caretaking continua.

In the present study, the HOME Involvement subscale yielded eleven significant associations for the preterm group. The importance of the Involvement subscale requires further scrutiny for it may provide us with the identity of a specific element of maternal responsivity which plays a key role in optimal developmental outcome.

For the preterm group in this study, the eleven significant correlations among various study variables with the Involvement subscale included father support, family support, the Neonatal Perception Inventory, the Denver Developmental and infant temperament factors: fussy and unpredictable. Associations were fewer for the fullterm group and included family support, temperament factor: fussy and maternal and paternal well-being. For both groups Involvement was strongly associated with the total HOME score. Siegel (1984) identified maternal involvement as the factor which "made the difference" for the false-positive children in her study of preterm and fullterm infants. That is, the babies who tested poorly and appeared to be at developmental risk in the first year of life and subsequently tested within normal limits, had mothers who scored high on maternal involvement as measured by the HOME.

Siegel concluded that it was a delay versus non-delay factor in her sample which differentiated the infants in her study rather than prematurity per se. Furthermore, she suggested that some mothers may have been responding to the delays in their infants with increased involvement. It seems plausible that for the mothers of preterm babies in the present study, the "concept" of prematurity was very fresh in their minds, causing them to respond to their infants as if they were delayed. The fact that there were a number of questionable scores on the Denver for the preterm

group suggests that they may have, in fact, been responding to actual infant behavior.

In sum, it may be that maternal involvement may make the difference for prematures in this study. Furthermore, "involvement" was associated with a constellation of support variables for preterms but not fullterms. In this case, Gottfied's "network of relationships" (1984, p.3) appears to include the infant's prematurity, increased maternal responsiveness via involvement as well as spousal support.

Regarding support, it was expected that study findings would corroborate those of Crockenburg's (1981) investigation which identified social support as a mediating factor for mothers with irritable infants. In the present study, it was presumed that the impact of father support would be greater for mothers of premature infants, the experiences surrounding such a birth serving to mobilize fathers in different ways than had the infant been born at term.

A number of significant correlations between father support and help with the Neonatal Perception Inventory at time 1 and time 2, the Denver, the HOME Inventory and maternal well-being appear to support a position that indeed father support and help are particularly salient for the preterm group. For the preterm group, the NPI at time 1 and time 2 was associated with the HOME Involvement subscale which was associated with scores on the Denver

Developmental. All three of these measures were correlated with a combination of father support and help variables. These associations, while appearing circuitous, are compatible with the notion that for the mothers of preterm babies, feeling supported allows her to regard her infant in a positive light, enables her to become more involved and results in more optimal Denver scores. Why the absence of such relationships for the fullterm group? It may be that for mothers of fullterms, the successful birth of a healthy baby, without complications, is fuel in and of itself to sustain positive perception of and involvement with her infant, irrespective of father support. Father support does not "make the difference" in this healthy, fullterm sample.

Additionally, for the preterm group, it appears that fathers may substitute for a less responsive, less accepting mother as indicated by the significant negative correlation between father support at time 1 and the HOME subscale "Acceptance" and between father help at time 2 and the HOME subscale "Responsive". This supports Crockenburg's (1981) conclusion that social support may supplant a less responsive mother.

Again, the differences found between groups illustrate a line of influence upon maternal responsiveness and well-being which appears hinged on both spousal and infant variables for the parents of preterms infants. While the influence of family support for both groups on maternal

involvement measured by the Home should not be disregarded, the associations were significant at a $p<.10$ level, suggesting a moderate but positive influence.

Findings from the Typical Day Survey suggest that direct involvement by the father is different for the two groups. For the preterm group, mothers and fathers were involved in twice as many joint caregiving activities as their fullterm counterparts. Yogman (1983) also found that fathers of preterms were involved in a greater number of caregiving activities as their fullterm counterparts. There are several points to consider. First, there is most likely a mutual influence between parents as they work together to provide care for their infant. This increase in joint caregiving by parents of preterm babies may be related to the lack of significant differences between mothers' and fathers' ratings of their infants on infant temperament factors. That is, as they care for the baby together, they influence how they perceive the baby, perhaps arriving at a more mutual concensus. Bates et al. (1979) consider "mother-father convergence as important validational information" (p.801). Second, these instances of caregiving provide increased opportunities for the father to have direct interaction with his infant. This is contrary to findings of others who identified the affective dimension of fathers and infants rather than the caregiving activity per se that contributes to optimal infant outcome (Easterbrooks &

Goldberg, 1983). Furthermore, increased opportunities to interact with one's infant may serve to increase the number of chances for successful interaction, fueling a positive feedback system between father and infant, thereby increasing the father's sense of efficacy. Finally, joint caregiving may have contributed to these mothers' feelings of being supported.

Support is often measured globally in the literature, as spousal, familial and extrafamilial (Feiring, 1976; Crockenburg, 1981; Shea, 1984). In the present study, family support and other support were measured as separate factors. Results indicate that family support, in particular, may have been operating to differentiate the transition to parenthood for the two groups. When data were analyzed for the sample as a whole, family support was positively associated with infant gestational age and negatively associated with the number of days the infant was hospitalized. Furthermore, analysis of variance revealed that family support was higher for the fullterm group. These data imply that family support was associated with healthier infants. There are at least two possible explainations for this finding. First, it seems plausible that parents of preterms have, during the hospitalization of their infant, been forced to rely upon one another in ways that family members could not be expected to. That is, the demands of the lengthy hospitalization of an infant exceeds the

resources that family members are able to provide. Also, for this particular group of parents of preterm infants, proximity to family members may have been a factor.

Finally, discussion concerning support must consider the ability of the mother to access and utilize support (Yogman, 1983; Sameroff & Chandler, 1975). What this means, in essence, is that a psychologically intact, healthy person has the means to attract, search out and otherwise adjust support appropriately to her needs. A useful measure, for future research, would be an assessment of the match between support desired and support received as well as some measure of the psychological well-being of the mother not unlike the measure of ego-strength employed by Wise & Grossman (1980) in their study of adolescent mothers and support. It may be, as Yogman (1983) proposes, that it is not alot but enough support which bodes most favorably for the mother.

The contribution of the infant to maternal responsiveness was analyzed with respect to findings on the Infant Characteristic Questionnaire (Bates, 1979) and is considered within the framework of debate regarding temperament as parent perception versus constitutional factors of the infant (Crockenburg, 1986). It was expected that based upon birth status alone, the preterm group in this study would be rated less favorably than their fullterm counterparts. Furthermore, it was presumed that preterms, scoring higher on such factors as irritability and fussiness

must adversely affect maternal responsiveness. In fact, analysis of variance, while showing preterms to score less favorably on all four ICQ factors, yielded only two factors: adaptability rated by mothers at time 2 and predictability, rated by fathers at time 2, which approached significance. Thus, at their means, the two groups looked similar with respect to temperamental ratings by both parents.

Conversely, the number of Pearson correlations for temperament factors with the HOME Inventory and the Denver Developmental suggests that there is a relationship between temperament and responsivity of the environment for all infants in the study and that these relationships differentiated the two groups. Perhaps most surprising was the high number of significant correlations for temperament factors and study variables for the fullterm group. Not only were there a greater number of correlations for fullterm infants but it appears that temperament makes the greatest impact on their fathers. To illustrate, there were nineteen significant correlations among the four ICQ factors with outcome measures for fathers of fullterms versus six for fathers of preterm infants. Further evidence of the salience of temperament for the fullterm group was identified through the Principal Factor Analysis which yielded two separate temperament factors: temperament and father temperament. There was no temperament factor for the preterm group. One possible explanation for these findings is that within the

early and short time frame of this investigation, the temperamental qualities of the preterm infants were not as apparent to the parents, perhaps obscured by health and development concerns. Interestingly, in the analysis of mothers' descriptions of their infants' behavior and development across time, it was the mothers of fullterms who used more descriptions of temperamental qualities at times 1 and 2. At time 3, however, mothers in both groups described their infants equally, with respect to temperamental qualities, suggesting that the preterm group had, in a sense, become more like their fullterm counterparts.

The presence of significant correlations between temperament and parent background variables for both groups supports findings of others (Bates et al. 1979; Sameroff etal. 1982; Crockenburg, 1986) suggesting that temperament is at least in part, a function of the such variables as age and education of the parents. In this sample there were group differences, however. Paternal variables, age and education were related to temperament variables for fullterm infants (none for mothers). For preterms, maternal age and education and paternal age were associated with temperament ratings.

The absence of an objective measure of infant temperament makes it impossible, as Crockenburg argues, to determine whether, for the infants in this study, temperament was constitutional or purely parent perception.

It was thought that an analysis of maternal and paternal rating differences might shed some light on this debate. That is, agreement between the two parents might be evidence for the constitutional position. In fact, there were only two factors for preterms and one for fullterms for which there was a significant difference between paternal and maternal ratings. This suggests that the parents may have been perceiving the same characteristics, some stability in infant characteristics in their first weeks at home together or perhaps the influence of daily discussion of the infant's behavior and development.

Additionally, the present investigation did not assess the degree to which mothers and fathers were satisfied with their infants' temperamental qualities. Such an assessment would provide information as to whether temperamental qualities typically viewed as negative might, in fact, be regarded positively by the parent i.e. the parent of a preterm regards irritability of her infant as a sign of thriving and robustness. There were two significant associations between ICQ factors with maternal satisfaction with life for mothers of preterms and three for mothers of fullterms.

Finally, there were a number of positive associations between infant temperament factors and various HOME subscales suggesting that regardless of etiology, temperament has an impact upon the responsiveness of the environment.

In the final analysis, the position of Sameroff et al. (1982) seems most plausible. That is, there are some child factors but more caregiver factors which contribute to temperament ratings.

To summarize, the present study supports an ecological framework for understanding the influences upon development of the infant. That is, the role of the father as both spouse and parent impacts significantly in the early weeks of life and particularly for the premature infants in this study. As Herzog (1980) states, "Fathers make the critical difference" (p. 361). Perhaps, as several of the fathers of premature babies in this sample suggested, the hospitalization of their infant served to mobilize their involvement through contact with the hospital staff, receiving continuously updated medical information as well as practical information regarding the care of their infant. Perhaps, too, while the hospital served as primary caretaker, it placed the father on equal footing with the mother. Marton et al. (1981) concluded that "the premature nursery appears to have a homogenizing effect" (p.667) regarding the parent-child interaction patterns of both the mother and father during the hospitalization of their infant. Conversely, for fathers of fullterms, involvement with his infant in the immediate postpartum period may be delayed somewhat in the presence of increased family support.

Finally, the period of extended hospitalization of the

infant may allow for the mother to recuperate from childbirth without the demands of round-the-clock infant care. This does not obviate the stresses that mothers of preterm babies experience but serves to highlight how the transition to parenthood, although considerably more difficult, has some repercussions which may buffer the stresses associated with it.

Qualitative findings suggest that there were similarities in the experience of bringing a new baby home for the two groups. For all parents, the ecstasy of bringing their infant home for the first time was apparent. Initially, it appeared that the bases of these feelings were derived from two different sources. For parents of preterms, it was the end of weeks or months of waiting. Their infant was well enough to go home and the principal responsibility for their baby was now transferred from hospital to them. For parents of fullterms, it was the next step in a successful experience surrounding pregnancy and birth. Closer consideration of the comments made by all parents suggests that the transition from hospital to home was characterized by feelings of empowerment over the destiny of their family.

Limitations and direction for future research.

Results of the present study should be interpreted with caution. First, the majority of findings reported are correlational and suggest associations between variables

rather than direct causation. The small sample size prohibits generalization of findings to the larger population of either preterm or fullterm infants and their families. Rather, results allow for informed hypotheses to be generated concerning the adjustment to parenthood for the families of preterm and fullterm infants and the role of the father/spouse with respect to maternal responsiveness to her infant. Moreover, these data are short-term and make projections about future outcome speculative at best.

Future research needs to address changes in paternal involvement, its relationship to changes in maternal responsiveness and changes in infant development as well. Researchers such as Belsky (1984) have already suggested that father involvement increases as the child matures. Others report that it is the toddler period which reveals the importance of father's role in the development of the child (Easterbrooks & Goldberg, (1984).

I would propose that it is the second year of life which plays an important role in the identification of which elements of the environment play a key role in fostering optimal development for the preterm infant. The toddler period is a time when issues surrounding independence and individuation emerge. It seems plausible that independence might be particularly critical for prematures and their parents, perhaps influenced by continued health and welfare concerns. In their study of well and mentally-ill mothers, their child-care attitudes and the development of their

infants, Cohler et al. (1980) found that for women in both groups, "low birth weight was associated with less adaptive attitudes regarding the child's individuation " (p.42). Future research might address the role of the father in the development of independence for toddlers born prematurely, and in particular, their influence on how mothers negotiate these issues. This may be especially salient for preterm infants who have experienced what may be termed the sickest neonatal course.

As discussed previously, the lack of homogeneity regarding infant health status not only makes comparison with other research difficult, but limits interpretation of findings as well. Within this subsample of preterm infants, five of eleven infants had birthweights under 1500g. and a gestational age of 34 weeks or less. They could be considered "sicker" than preterm infants in similar studies and may explain the group differences found herein. Thus, findings here suggest that for sicker infants, the support factor may be particularly important. Research with more homogenous samples could further our understanding of the adaptation of parents and preterm infants and what fosters optimal outcome.

Finally, as Yogman (1983) points out, it is not the amount of support but the "match" of available support to desired support which becomes critical to understanding its impact. The present study did not glean an accurate picture of such a match, a fault of the instruments used to measure

it, the difficulty in assessing a true sense of such a match, or both. This notion of a match between support desired and support obtained is a useful principal for guiding clinical intervention.

This investigation has lent further support to the identification of father support as an important element of the ecology of child development, specifically as it influences maternal well-being and responsiveness for mothers of preterm infants. Finally, the evidence from this study supports a notion that the premature birth of an infant serves to mobilize father involvement in ways unlike fullterm birth.

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APPENDIX A

DENVER DEVELOPMENTAL SCREENING TEST
STO = STOMACH
SIT = SITTING
PERCENT OF CHILDREN PASSING
25 50 75 90
Test Item
Date
Name
Birthdate
Hosp. No.
PERSONAL-SOCIAL
FINE MOTOR-ADAPTIVE
LANGUAGE
GROSS MOTOR
MONTHS
YEARS
REGARDS HANDS
SMILES RESPONSIVELY
SMILES SPONTANEOUSLY
FOLLOWS TO MIDLINE
EQUAL MOVEMENTS
FOLLOWS PAST MIDLINE
HANDS TOGETHER
RESPONDS TO BELL
VOCALIZES NOT CRYING
LAUGHS
SQUEALS
STO HEAD UP 45°
STO HEAD UP 90
SIT HEAD STEADY
ROLLS OVER
INITIALLY SHY WITH STRANGERS
PLAYS PAT-A-CAKE
FEEDS SELF CRACKER
RESISTS TOY PULL
PLAYS PEEK-A-BOO
WORKS FOR TOY OUT OF REACH
* 100% pass at birth
GRASPS RATTLE
REGARDS RAISIN
REACHES FOR OBJECT
SIT LOOKS FOR YARN
SIT TAKES 2 CUBES
RAKES RAISIN
THUMB FINGER GRASP
PASSES CUBE HAND TO HAND
TURNS TO VOICE
DADA OR MAMA NONSPECIFIC
PULL TO SIT NO HEAD LAG
SITS WITHOUT SUPPORT
STANDS HOLDING ON
PULLS SELF TO STAND
GETS TO SITTING
INITIALLY SHY WITH STRANGERS
PLAYS PAT-A-CAKE
PLAYS BALL WITH EXAMINER
INDICATES WANTS (NOT CRY)
DRINKS FROM CUP
IMITATES HOUSEWORK
USES SPOON, SPILLS LITTLE
PUTS ON CLOTHING
BUTTONS UP
WASHES & DRIES HANDS
HELPS IN HOUSE SIMPLE TASKS
DRESSES WITH SUPERVISION
PLAYS INTERACTIVE GAMES e.g. TAG
SEPARATES FROM MOTHER EASILY
REMOVES GARMENT
DRESSES WITHOUT SUPERVISION
SCRIBBLES SPONTANEOUSLY
TOWER OF 2 CUBES
RANG 2 CUBES HELD IN EACH HAND
NEAT FINGER GRASP OF RAISIN
DUMPS RAISIN FROM BOTTLE SPONT.
DUMPS RAISIN FROM BOTTLE DEMONSTR.
TOWER OF 4 CUBES
IMITATES VERTICAL LINE WITHIN 30°
TOWER OF 8 CUBES
COPIES +
COPIES O
IMITATES BRIDGE
COPIES □
IMITATES 1 DEMONSTR.
DRAWS MAN 3 PARTS
DRAWS MAN 6 PARTS
PICKS LONGER LINE 3 OF 3
3 WORDS OTHER THAN MAMA, DADA
COMBINES 2 DIFFERENT WORDS
POINTS TO 1 NAMED BODY PART
NAMES 3 PICTURE
FOLLOWS DIRECTIONS/2 cd
USES PLURALS
GIVES 1ST & LAST NAME
COMPREHENDS COLD, TIRED, HUNGRY
COMPREHENDS PREPOSITIONS/3 cd
RECOGNIZES SPOON/2 of 4
OPPOSITE ANALOGIES 2 of 3
DEFINES WORDS/6 of 9
COMPOSITION OF/3 of 4
REAR SOME AREFLEX
STANDS MOMENTARILY
WALKS HOLDING ON FURNITURE
STANDS ALONE WELL
STOOPS & RECOVERS
WALKS WELL
WALKS BACKWARD
WALKS UP STEPS
KICKS BALL FORWARD
THROWS BALL OVERHAND
BALANCE ON 1 FOOT 1 SECOND
JUMPS IN PLACE
PEDALS TRICYCLE
BROAD JUMP
BALANCE ON 1 FOOT 10 SECONDS/2 of 3
HOPS ON 1 FOOT
CATCHES BOUNCED BALL/2 of 3
HEEL TO TOE WALK/2 of 3
BACKWARD HEEL TOE/2 of 3
BALANCE ON 1 FOOT 5 SECONDS/2 of 3

APPENDIX B

HOME INVENTORY

Place a plus (+) or minus (-) in the box alongside each item if the behavior is observed during the visit or if the parent reports that the conditions or events are characteristic of the home environment. Enter the subtotal and the total on the front side of the Record Sheet.

I. Emotional and Verbal RESPONSIVITY	
1. Parent spontaneously vocalized to child twice.	
2. Parent responds verbally to child's verbalizations.	
3. Parent tells child name of object or person during visit.	
4. Parent's speech is distinct and audible.	
5. Parent initiates verbal exchanges with visitor.	
6. Parent converses freely and easily.	
7. Parent permits child to engage in "messy" play.	
8. Parent spontaneously praises child at least twice.	
9. Parent's voice conveys positive feelings toward child.	
10. Parent caresses or kisses child at least once.	
11. Parent responds positively to praise of child offered by visitor.	
Subtotal	
II. ACCEPTANCE of Child's Behavior	
12. Parent does not shout at child.	
13. Parent does not express annoyance with or hostility to child.	
14. Parent neither slaps nor spanks child during visit.	
15. No more than one instance of physical punishment during past week.	
16. Parent does not scold or criticize child during visit.	
17. Parent does not interfere or restrict child more than 3 times.	
18. At least ten books are present and visible.	
19. Family has a pet.	
Subtotal	
III. ORGANIZATION of Environment	
20. Substitute care is provided by one of three regular substitutes.	
21. Child is taken to grocery store at least once/week.	
22. Child gets out of house at least four times/week.	
23. Child is taken regularly to doctor's office or clinic.	
24. Child has a special place for toys and treasures.	
25. Child's play environment is safe.	
Subtotal	
IV. Provision of PLAY MATERIALS	
26. Muscle activity toys or equipment.	
27. Push or pull toy.	
28. Stroller or walker, kiddie car, scooter, or tricycle.	
29. Parent provides toys for child during visit.	
30. Learning equipment appropriate to age--cuddly toys or role-playing toys.	
31. Learning facilitators--mobile, table and chairs, high chair, play pen.	
32. Simple eye-hand coordination toys.	
33. Complex eye-hand coordination toys (those permitting combination).	
34. Toys for literature and music.	
Subtotal	
V. Parental INVOLVEMENT with Child	
35. Parent keeps child in visual range, looks at often.	
36. Parent talks to child while doing household work.	
37. Parent consciously encourages developmental advance.	
38. Parent invests maturing toys with value via personal attention.	
39. Parent structures child's play periods.	
40. Parent provides toys that challenge child to develop new skills.	
Subtotal	
VI. Opportunities for VARIETY	
41. Father provides some care daily.	
42. Parent reads stories to child at least 3 times weekly.	
43. Child eats at least one meal per day with mother and father.	
44. Family visits relatives or receives visits once a month or so.	
45. Child has 3 or more books of his/her own.	
Subtotal	
TOTAL SCORE	

*For complete wording of items, please refer to the Administration Manual.

APPENDIX C

NEONATAL PERCEPTION INVENTORY

Your Baby

Please check the blank you think best describes your baby.

1. How much crying has your baby done?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

2. How much trouble has your baby had feeding?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

3. How much spitting up or vomiting has your baby done?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

4. How much difficulty has your baby had in sleeping?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

5. How much difficulty has your baby had with bowel movements?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

6. How much trouble has your baby had in settling down to a predictable pattern of eating and sleeping?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

NEONATAL PERCEPTION INVENTORY

Average Baby

Please check the blank you think best describes what most babies are like.

1. How much crying do you think the average baby does?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

2. How much trouble do you think the average baby has in feeding?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

3. How much spitting up or vomiting do you think the average baby does?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

4. How much difficulty do you think the average baby has in sleeping?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

5. How much difficulty does the average baby have with bowel movements?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

6. How much trouble do you think the average baby has in settling down to a predictable pattern of eating and sleeping?

   a great deal ____ a good bit ____ moderate amount ____ very little ____ none ____

APPENDIX D

INFANT BEHAVIOR QUESTIONNAIRE

SECTION II. BABY CHARACTERISTICS

* * * * * * * *

Part II. On the following questions, please circle the number that is most typical of your baby. "About average" means how you think the typical baby would be scored.

1. How easy or difficult is it for you to calm or soothe your baby when he/she is upset?

1	2	3	4	5	6	7
very easy			about average			difficult

2. How easy or difficult is it for you to predict when your baby will go to sleep and wake up?

1	2	3	4	5	6	7
very easy			about average			difficult

3. How easy or difficult is it for you to predict when your baby will become hungry?

1	2	3	4	5	6	7
very easy			about average			difficult

4. How easy or difficult is it for you to know what's bothering your baby when he/she cries or fusses?

1	2	3	4	5	6	7
very easy			about average			difficult

5. How many times per day, on the average, does your baby get fussy and irritable-- for either short or long periods of time?

1	2	3	4	5	6	7
never	1-2 times per day	3-4 times per day	5-6 times per day	7-9 times per day	10-14 times per day	more than 15

6. How much does your baby cry and fuss in general?

1	2	3	4	5	6	7
very little much less than the average baby			average amount; about as much as the average baby			a lot: much more than the average baby

7. How did your baby respond to his/her first bath?

1	2	3	4	5	6	7
very well-- baby loved it			neither liked nor disliked it			terribly-- didn't like it

SECTION II., cont.

8. How did your baby respond to his/her first solid food?

1	2	3	4	5	6	7
very favorably--liked it immediately			neither liked nor disliked it			very negatively--did not like it at all

9. How does your baby typically respond to a new person?

1	2	3	4	5	6	7
almost always responds favorably			responds favorably about half the time			almost always responds negatively at first

10. How does your baby typically respond to being in a new place?

1	2	3	4	5	6	7
almost always responds favorably			responds favorably about half the time			almost always responds negatively at first

11. How well does your baby adapt to things (such as in items 7-10) eventually?

1	2	3	4	5	6	7
very well always likes it eventually			ends up liking it about half the time			almost always dislikes it in the end

12. How easily does your infant get upset?

1	2	3	4	5	6	7
very hard to upset--even by things that upset most babies			about average			very easily upset b things that wouldn' bother most babies

13. When your baby gets upset (e.g., before feeding, during diapering, etc.) how vigorously or loudly does he/she cry and fuss?

1	2	3	4	5	6	7
very mild intensity			moderate intensity or loudness			very loud or intens really cuts loose

14. How does your baby react when you are dressing him/her?

1	2	3	4	5	6	7
very well--likes it			about average--doesn't mind it			doesn't like it at all

15. How active is your baby in general?

1	2	3	4	5	6	7
very calm and quiet			average			very active and vigorous

16. How much does your baby smile and make happy sounds?

1	2	3	4	5	6	7
a great deal, much more than most infants			an average amount			very little, much less than most infants

SECTION II., cont.

17. What kind of mood is your baby generally in?

1	2	3	4	5	6	7
very happy and cheerful			neither serious nor cheerful			serious

18. How much does your baby enjoy playing little games with you?

1	2	3	4	5	6	7
a great deal, really loves it			about average			very little, doesn't like it much

19. How much does your baby want to be held?

1	2	3	4	5	6	7
wants to be free most of the time			sometimes wants to be held, sometimes not			a great deal--wants to be held almost all the time

20. How does your baby respond to disruptions and changes in the everyday routine, such as when you go to church, or a meeting, on trips, etc?

1	2	3	4	5	6	7
very favorably, doesn't get upset			about average			very unfavorably, gets quite upset

21. How easy is it for you to predict when your baby will need a diaper change?

1	2	3	4	5	6	7
very easy			about average			very difficult

22. How changeable is your baby's mood?

1	2	3	4	5	6	7
changes seldom, and changes slowly when he/she does change			about average			changes often and rapidly

23. How excited does your baby become when people play with or talk to him/her?

1	2	3	4	5	6	7
very excited			about average			not at all

24. Please rate the overall degree of difficulty your baby would present for the average mother.

1	2	3	4	5	6	7
super easy			ordinary, some problems			highly difficult to deal with

APPENDIX E

PARENT SURVEY : TIME 1 : 2 WEEKS POST DISCHARGE

I. Hospital Experiences.

1. How would you describe your satisfaction with the care your baby received in the hospital?

   1. Dissatisfied
   2. Fairly satisfied
   3. Neither satisfied nor dissatisfied
   4. Satisfied
   5. Very satisfied

2. How would you describe your feelings about the information your received about your baby during the hospital stay?

   1. Dissatisfied
   2. Fairly satisfied
   3. Neither satisfied nor dissatisfied
   4. Satisfied
   5. Very satisfied

3. How comfortable did you feel while visiting your baby?

   1. Uncomfortable
   2. Fairly uncomfortable
   3. Neither comfortable nor uncomfortable
   4. Comfortable
   5. Very comfortable

4. How often were you able to visit?

II. Bringing the Infant Home.

5. How would you describe your feelings when you finally where able to bring your baby home?

6. Did you have any concerns? What about?

7. What arrangements did you make for bringing your baby home?

8. Has anyone - family, friends, etc. contacted you since the birth of your baby?

   Yes _____ No _____

   Who? _____
   In what ways? (cards, flowers, gifts, calls, visits

8. How would you describe the first few days you were home with your baby?

   1. Very difficult
   2. Somewhat difficult
   3. Neither difficulty nor easy
   4. Somewhat easy
   5. Very easy

9. What was your baby like those first few days?

   1. Very fussy
   2. Somewhat fussy
   3. Medium
   4. Somewhat calm
   5. Very calm

10. Now that your baby has been home 2 weeks have you had any problems with:

    sleeping at night
    crying
    feeding
    weight gain
    breathing
    anything else

    (Probe: Is it still a problem or has it passed now? How have you dealt with this problem?)

11. How has your baby's health been?

    1. Very bad (hospitalized)
    2. Somewhat bad (needed doctor several times)
    3. Neither bad nor good
    4. Good (OK - has had typical infant ailments)
    5. Very good (has had not ailments)

12. All in all, would you say your baby is:

    1. Very easy to look after
    2. Somewhat easy to look after
    3. Neither easy nor difficult
    4. Somewhat difficult
    5. Very difficult

13. What do you enjoy most about being a mother?

14. What has been the most bothersome or difficult for you?

15. Mothers differ in how they thing a baby should be looked after. How would you answer these questions?

    a. Have you read or been given advice about taking care of your baby? What and/or from whom?

    b. When you have a question about your baby how do you find the information you need?

III. Support.

16. Most mothers get help after having a baby, who would you say has helped you at these different times:

    a. When baby was first born

    b. When you were visiting the baby in the hospital

    c. When you first brought the baby home

    d. Since you've been home for the past two weeks

    (Probe: identify help, in what ways, by whom)

17. When, if at any time, has the help <u>not</u> been helpful?

18. What help have you <u>not</u> gotten or <u>not</u> presently getting, at any of the points in time we have discussed - that you wish(ed) you had?

19. Regarding advice, would you say you:

    1. Prefer a lot less
    2. Prefer a little less
    3. Get enough
    5. Want a little more
    6. Want a lot more (if so, what about?)

20. How would you describe the encouragement you've received concerning you as a mother? (Probe: from whom?)

    1. Prefer a lot less
    2. Prefer a little less
    3. Get enough
    5. Want a little more
    6. Want a lot more

21. Have you met with any other families with infants who were born early? When? Do you still keep in touch with them? How often?

Yes _____ No _____

22. In what ways does your husband help out?

23. How would you describe your husband's/wife's support since your baby was born?

1. Very supportive
2. Somewhat supportive
3. Neither supportive nor unsupportive
4. Somewhat unsupportive
5. Very unsupportive

24. How satisfied are you with this?

1. Very dissatisfied (I wish things were different)
2. Somewhat dissatisfied (I would like some changes)
3. Somewhat satisfied (OK for now; pretty good)
4. Very satisfied (I'm really pleased)
5. Other (please explain)

25. Has the early birth of your baby affected your relationship with your husband?

1. Has affected in a bad way.
2. Has affected in a somewhat bad way.
3. Has had neither a bad effect nor good effect.
4. Has affected in somewhat good way.
5. Has affected in a very good way.
6. Other.

26. Do you think this would be different had you baby been born later?

Yes _____ In what way?_____

No _____

27. At this point do you feel your married life is:

1. Very unhappy
2. Somewhat unhappy
3. Somewhat happy
4. Very happy

28. What would you say are your (3) primary concerns about anything?

29. When you take everything into account, how would you describe your current life situation?

1. Things are very bad right now.
2. Things are fairly bad right now.
3. Things are OK -- not bad and not good.
4. Things are very good.
5. Other (please explain)

PARENT SURVEY : TIME 3 : ONE MONTH

I. I am interested in what a typical day is like for you and your baby.

1. Who did the following tasks today?

Got up during the night (last night) with baby	M	F	Other	No one
Got up with baby in morning	M	F	Other	No one
Gave baby breakfast	M	F	Other	No one
Dressed baby	M	F	Other	No one
Took baby to center or sitter	M	F	Other	No one
Picked baby up from center or sitter	M	F	Other	No one
Gave baby lunch	M	F	Other	No one
Put baby down for nap	M	F	Other	No one
Gave baby supper	M	F	Other	No one
Bathed baby	M	F	Other	No one
Dressed baby for sleep	M	F	Other	No one
Put baby to bed	M	F	Other	No one
Changed most diapers today	M	F	Other	No one

2. Would you say this is a typical day?

Yes _____ No _____ (If no, how different?)

3. How satisfied are you with the help you received today?

1. Very dissatisfied (I wish things were very different)
2. Somewhat dissatisfied (I would like some changes)
3. Neither satisfied nor dissatisfied
4. Somewhat satisfied (OK)
5. Very satisfied (I'm really pleased)

4. How would you describe your husband's/wife's support since the baby's been home?

II. Thing about your baby...

5. How would you describe _____?

6. What is your impression of your baby's health right now?

7. Since we last spoke, what is _____ doing (behavior) that's different?

8. What are your (3) primary concerns about anything right now?

9. When you take everything into consideration how would you describe your current life situation?

   1. Things are very bad right now.
   2. Things are fairly bad right now.
   3. Things are OK - not bad and not good.
   4. Things are fairly good.
   5. Things are very good.
   6. Other (please explain)

PARENT SURVEY : TIME 4 : THREE MONTHS

Questions to supplement the HOME Inventory.

1. Since we last spike, what new things does _____ do?

2. How would you say your baby is growing and getting along?

   1. Much above average
   2. Above average
   3. Average
   4. Below average
   5. Much below average

3. Do you have any concerns about how _____ is growing and developing?

   Yes _____ No _____ (Could you please explain)

4. How do you think _____ will do in school?

   1. Much above average
   2. Above average
   3. Average
   4. Below average
   5. Much below average

5. What is the best part of being a mother (father)?

6. What is the hardest part?

7. How much has your husband done in connection with taking care of your baby?

   1. No help at all
   2. Very little help
   3. Moderate amount of help
   4. A good bit of help
   5. A great deal of help

   (For father: How much help would you say you have given?)

8. During the past three months, how would you describe your husband's support?

   1. Very unsupportive
   2. Somewhat unsupportive
   3. Neither supportive nor unsupportive
   4. Somewhat supportive
   5. Very supportive

9. To what extent has fatherhood changed your husband?

   1. Has changed a lot
   2. Has changed somewhat
   3. Has changed neither a lot nor a little
   4. has changed very little

10. Do you think this would be different had _____ not been born early?

    Yes _____ No _____ (please explain)

11. If you could, what would you tell other parents of infants born early?

12. What are your (3) primary concerns about things right now?

13. Taking everything into consideration, how would you describe your current life situation?

    1. Things are very bad right now.
    2. Things are fairly bad right now.
    3. Things are OK -- not bad and not good.
    4. Things are fairly good.
    5. Things are very good.
    6. Other (please explain)

FATHER SURVEY: THREE MONTHS

First, we are interested in your observations about how your child is growing and developing.

1. How would you say your baby is growing and getting along?
   1...Much above average
   2....Above average
   3... Average
   4....Below average
   5....Much below average

2. Do you have any concerns about how your baby is growing and developing?
   Yes_____ No_____
   If yes, please explain.

We are also interested in some of the things you do with your child.

3. How much would you say you have done in connection with taking care of your baby? (circle for each time period)

1st month	2nd month	3rd month
1...none	1...none	1...none
2...very little	2...very little	2...very little
3...moderate	3...moderate	3...moderate
4...a good bit	4...a good bit	4...a good bit
5...a great deal	5...a great deal	5...a great deal

4. Concerning the amount of time you have been involved with your baby's caretaking (feeding, dressing, diapering, etc) have you been able to participate....
   5...a lot more than I wanted
   4...more than I wanted
   3...as much as I wanted
   2...less than I wanted
   1...a lot less than I wanted

5. What are some of the things you have done with your child?
   diapering__ feeding__ bathing__ playing__
   soothe & comfort__ nothing__ teaching, games, walks, talks__
   dressing, babysit, put to bed, up at night ____

6. What are some of the areas in which you and your wife disagree in regard to childrearing?

7. What are some of the ways in which you feel you have influenced your child?

1...Through play
2...Amount of help to family
3...Love, affection
4...male role (father figure)
5...none
6...other (explain)

Now, some questions about fatherhood and what it has been like for you.

8. What do you feel is the most important role of being a father?

1...Financial support
2...Companionship
3...Provide opportunities for education
4...Teaching, values, discipline
5...Emotional support of the baby's mother
6...Male role
7...Other (explain)

Comments, if any:

9. Are you satisfied with your role as a father? Do you find your role to be:

1...very satisfying
2...somewhat satisfying
3...moderately satisfying
4...neither satisfying nor dissatisfying
5...somewhat dissatisfying
6...very dissatisfying

10. What do you enjoy most about being a father?

11. What is the hardest part about being a father?

12. To what extent did the birth of your baby interrupt or cancel your future plans in relation to your career, employment, education?

    1...not at all
    2...very little
    3...moderate amount
    4...a good bit
    5...a great deal

13. To what extent has your baby influenced or anged your lifestyle and/or home environment?

    1...not at all
    2...very little
    3...a moderate amount
    4...a good bit
    5...a great deal

    If changes, in what ways?

14. To what extent has motherhood changed or influenced your wife?

    1...not at all
    2...very little
    3...a moderate amount
    4...a good bit
    5...a great deal

    In what way?

15. At this time, how do you feel about being a father?

    1...very good, a pleasant experience
    2...neither pleasant nor unpleasant experience
    3...variable, sometimes pleasant, sometimes unpleasant
    4...unpleasant or depressing
    5...other (explain)

16. What are your primary concerns at the present time?

Now, thinking about your child's future:

17. How do you think your child will do in school?

1...much above average
2...above average
3...average
4...below average
5...much below average

18. How far do you think your child will go in school?

1...below high school
2...complete high school
3...complete business or trade school
4...complete college
5...beyond college (explain)_____
6...other (explain)_____

In conclusion:

19. If you could, what would you tell other parents of infants born early?

20. How would you describe your current life situation?

1...Things are very bad right now.
2...Things are fairly bad right now.
3...Things are OK--not bad and not good.
4...Things are fairly good.
5...Things are very good.
6...Other (please explain)

APPENDIX F

LOCUS OF CONTROL SCALE

WHAT I REALLY THINK.....

This is simply an attempt to find out how you view your world.

Please read each of the following statements carefully.

If you agree with the statement, check the line under column YES next to the statement.

If you disagree with the statement, check the line under column NO next to the statement.

Don't skip any statements.

Answer as honestly as you can; if you spend a few moments to think about each of these issues, it could help you to get a clearer idea about just how you really think...

YES	NO		
____	____	1.	Do you believe that most problems will solve themselves if you just don't fool with them?
____	____	2.	Do you believe that you can stop yourself from catching a cold?
____	____	3.	Are some people just born lucky?
____	____	4.	When you were younger did you feel most of the time that getting good grades meant a great deal to you?
____	____	5.	Are you often blamed for things that just aren't your fault?
____	____	6.	Do you believe that if somebody studies hard enough he or she can pass any subject?
____	____	7.	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?
____	____	8.	Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?
____	____	9.	Do you feel that most of the time parents listen to what their children have to say?
____	____	10.	Do you believe that wishing can make good things happen?
____	____	11.	When you get punished or put down, does it usually seem it's for no good reason at all?

YES	NO		
___	___	12.	Most of the time, do you find it hard to change a friend's (mind) opinion?
___	___	13.	Do you think that cheering more than luck helps a team to win?
___	___	14.	Do you feel that it's nearly impossible to change your parent's mind about anything?
___	___	15.	Do you believe that parents should allow children to make most of their own decisions?
___	___	16.	Do you feel that when you do something wrong, there's very little you can do to make it right?
___	___	17.	Do you believe that most people are just born good at sports?
___	___	18.	Are most of the other people your age stronger than you are?
___	___	19.	Do you feel that one of the best ways to handle most problems is just not to think about them?
___	___	20.	Do you feel that you have a lot of choice in deciding who your friends are?
___	___	21.	If you find a four leaf clover, do you believe that it might bring you luck?
___	___	22.	When you were younger did you often feel that whether you did your homework had much to do with what kind of grades you got?
___	___	23.	Do you feel that when a person your age is angry at you there's little you can do to stop him or her?
___	___	24.	Have you ever had a good luck charm?
___	___	25.	Do you believe that whether or not people like you depends on how you act?
___	___	26.	When you were younger did your parents usually help you if you asked them to ?
___	___	27.	Have you felt that when people were mean to you, it was usually for no reason at all?
___	___	28.	Most of the time, do you feel that you can change what might happen tomorrow by what you do today?
___	___	29.	Do you believe that when bad things are going to happen, they just are going to happen no matter what you try to do to stop them?
___	___	30.	Do you think that people can get their own way if they just keep trying?

YES	NO		
____	____	31.	Most of the time, do you find it useless to try to get your own way at home?
____	____	32.	Do you feel that when good things happen, they happen because of hard work?
____	____	33.	Do you feel that when somebody your age wants to be your enemy, there's little you can do to change matters?
____	____	34.	Do you feel that it's easy to get friends to do what you want them to?
____	____	35.	Do you usually feel that you have little to say about what you get to eat at home?
____	____	36.	Do you feel that when someone doesn't like you, there's little you can do about it?
____	____	37.	When you were younger, did you usually feel that it was almost useless to try in school because most other children were just plain smarter than you?
____	____	38.	Are you the kind of person who believes that planning ahead makes things turn out better?
____	____	39.	Most of the time, do you feel that you have little to say about what your family decides to do?
____	____	40.	Do you think it's better to be smart than to be lucky?

APPENDIX G

MATERNAL ATTITUDE SURVEY

The following statements represent matters of interest and concern to mothers. Not all mothers feel the same way about them and, in fact, there is no one "right" way to think about them. Read each statement carefully and circle the number at the left which most correctly reflects YOUR degree of agreement or disagreement. Try to answer all statements without skipping items or looking back.

1	2	3	4	5	6
Strongly agree	Moderately agree	Slightly agree	Slightly disagree	Moderately disagree	Strongly disagree

(circle one)

1 2 3 4 5 6 (1) It is upsetting to a mother when her infant leaves half the formula in his (her) bottle.

1 2 3 4 5 6 (2) The Questions children ask often seem to be ridiculous.

1 2 3 4 5 6 (3) One big trouble about babies is that you can't do the things you liked to do before the baby was born.

1 2 3 4 5 6 (4) Babies are frequently so demanding that their mothers have no time for anything else.

1 2 3 4 5 6 (5) Pediatricians could be much more useful in helping mothers to bring up their babies.

1 2 3 4 5 6 (6) A mother is usually glad to let someone else hold her baby, but is secretly pleased when the baby shows that it prefers her.

1 2 3 4 5 6 (7) Mothers would prefer that their little babies not squirm and wiggle so much.

1 2 3 4 5 6 (8) Most of the time a one-year-old hates to let his (her) mother out of his (her) sight.

1 2 3 4 5 6 (9) Children seem to ask questions about things which should not concern them.

1 2 3 4 5 6 (10) A typical one-year old baby is likely to get upset when he (she) is left with a baby-sitter.

1 2 3 4 5 6 (11) No matter what parents request, children often shake their heads "no".

1 2 3 4 5 6 (12) Babies act like they are the most important people in the household and are always demanding things.

1 2 3 4 5 6 (13) Husbands could do a great deal more to be of help to their wives during the early months of motherhood.

1 2 3 4 5 6 (14) If you give a child an inch, he (she) will take a mile.

1 2 3 4 5 6 (15) It is quite understandable that a woman should not want to have sexual relations while she is pregnant.

1 2 3 4 5 6 (16) The pain of childbirth is so great that a woman sometimes wonders if it's worthwhile.

1 2 3 4 5 6 (17) Hospitals send mothers home too soon after the child is born.

1 2 3 4 5 6 (18) A woman wants to be able to call on her mother for help when she returns from the hospital with her newborn baby.

1 2 3 4 5 6 (19) Children take great delight in annoying parents by pushing the rules to the limit.

1 2 3 4 5 6 (20) Young children seem to ask far too many questions.

1 2 3 4 5 6 (21) Children are likely to get into something and break it if their mothers don't keep their eyes on them every moment.

1	2	3	4	5	6
Strongly agree	Moderately agree	Slightly agree	Slightly disagree	Moderately disagree	Strongly disagree